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EDITORIAL

CHRISTMAS.

The snow has come. Christmas is approaching. Pleasant memories hover round us. We think of the joy that Christmas brings to every heart and home. We remember the happy days that we have spent before at this glad season. Once more it has made its appearance to gladden and cheer us.

As soon as Christmas exams. are over our thoughts begin to widen and we actually feel that, after all, we are human beings and not objects made of stone. We are told that this season should be one of peace and joy to all. As students of a great University we look on the outside world with some interest at this time. We can hardly

say that peace abounds everywhere. Europe is in an anxious state, and how far the unrest will affect us in Canada remains to be seen. Our only hope is that Christmas Day will find the world at peace.

For many of us this Christmas will be our last as students in this great institution. Like others before us, we must soon go and take our part in the struggle for existence. Year after year the same thing goes on without ceasing. College days, like all good things, must come to an end. Those of us who spend Christmas at the College, wherever we may be, will always look back with pleasure on its happy associations. Christmas reminiscences always seem to sparkle and grow brighter with years.

Then, too, Christmas is the forerunner of a New Year. We ask ourselves what has the New Year in store for us? The curiosity keeps up and we never seem satisfied year come and year go, for so is human nature.

That 1913 brings great things for each and every one of us is the wish of the editorial staff. We wish our readers "A Very Merry Xmas and a Happy and Prosperous New Year."

* * *

Probably one of the greatest drawbacks which the Magazine has experienced since its earliest publication is the fact that each year a new staff takes charge of Magazine matters, but this must ever remain an insurmountable difficulty. We are not alone in this regard, for all College papers must have the same obstacle to face.

With this number the labors of the staff of 1912-13 are ended, and with the next issue the new staff comes into office. This year has proved to be one of the most successful the Magazine has ever had, both from a business and

a literary standpoint; not that we wish in any way to make boastful mention of magazine matters, but in justice to the members of the editorial staff we feel compelled to acknowledge with all sincerity the splendid manner in which the various departments have conducted their work.

Before this number reaches our readers the new staff will have been appointed; it is fortunate, indeed, that each year one or two members of the old staff are usually re-elected to the new staff, each, of course, filling a new office. This, as it were, forms a nucleus for the conducting of business without confusion and delay when the new staff comes into office.

In a previous issue we brought before the attention of students the necessity of realizing that the Magazine is essentially an organ of the student body, primarily given to their interests and to their welfare. The editorial board are indeed servants of the student body, and we should always consider the sacrifice of time and thought which the members of the board make in accepting positions on it. Bearing this in mind, the retiring board are asking one and all to give their united support to the new board and thereby assist in furthering the interests of our Magazine. Without this co-operation, much cannot be accomplished, and now that the magazine has been placed on some foundation, we hope that its permanency is assured. This can only be done by consistent work on the part of each one of us. Subscribe, contribute, patronize the advertisers, be a "booster" not a "leaner" !

The retiring board wishes also to take this opportunity of most sincerely thanking both faculty and friends for their help in making the past year such a successful one. We thank them all for

their contributions, literary and otherwise, which were always given without a murmur.

We wish the Magazine long life and prosperity.

* * *

A former editor of the Magazine, on giving up the reins of office, wrote as follows:—"It is with considerable mixed feelings that the present editor takes up his pen to write his last editorial for the Macdonald College Magazine."

To-day these sentiments are echoed by the retiring editor. There is a feeling of relief at the prospect of having his responsibilities shouldered by another shortly to be elected, but at the same time there is a feeling of regret for his resignation of an office which, while it has taken up a considerable portion of

his time, has yet proved a pleasant and interesting one.

Having been connected with the Magazine since its inception in 1910, the retiring editor is in a position to speak with some authority on its working, and he makes no hesitation in saying that never before have the relations among the members of the staff been more harmonious. At an early date the various members began to realize their respective duties and at no moment have they shirked. This means that there has been a system of co-operation which hardly existed before. The results are most encouraging, and the editor takes this opportunity of wishing, on behalf of himself and those who retire with him, that the Magazine under the guidance of the new hand may excel in every regard all previous attempts.

OPPORTUNITY.

They do me wrong who say I come no more
 When once I knock and fail to find you in ;
 For every day I stand outside your door,
 And bid you wake and rise to fight and win.

Wail not for precious chances passed away,
 Weep not for golden ages on the wane ;
 Each night I burn the records of the day,
 At sunrise every soul is born again.

Laugh like a boy at splendors that have sped,
 To vanished joys be blind and deaf and dumb ;
 My judgments seal the dead past with its dead,
 But never bind a moment yet to come.

Art thou a mourner ? Then rouse thee from thy spell !
 Art thou a sinner ? Sins may be forgiven ;
 Each morning gives thee wings to flee from hell,
 Each night a star to guide thy feet to Heaven.

—R. B. MALONE.

Some Notes on a Quebec Parish.

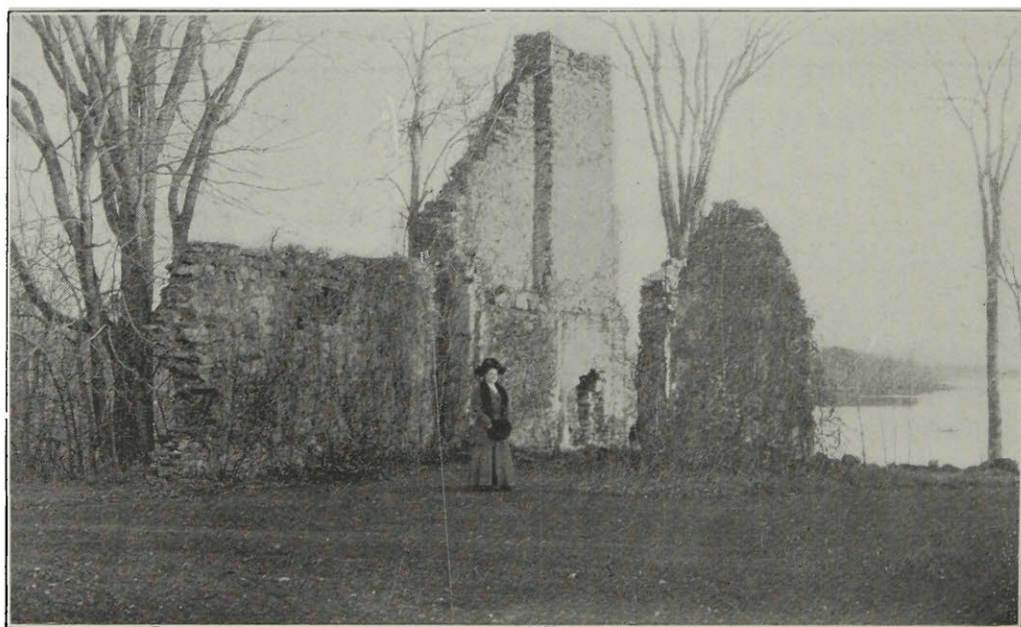
By W. D. MACFARLANE, Ph. D.



CANADA has many places of romantic interest, but none in this respect can surpass the district in which is Saint Anne de Bellevue.

Its situation at the meeting place of two of the great rivers of Canada, means that in days gone by most of those whose names figure in the story of Canadian exploration and settlement have at some time in their careers passed and repassed the site of Saint Anne.

forget the Saint's timely aid, for three years later, in 1714, he dedicated an altar to her near where the present parish church stands. The name of the parish, from its founding about thirty years before to the time of Breslay's stormy voyage, had been St. Louis, but as an act of gratitude, henceforth it was to bear the name of St. Anne. The latter half of the name, *de Bellevue*, comes no doubt from the fief or estate de Bellevue, granted by the seigneurs



The Old Fort at Senneville.

The very name of the parish, like many of the place names of the Province of Quebec, is founded on a romantic tradition, which is substantially as follows: The curé of the parish, Breslay, in the course of his official duties was one day crossing in a canoe from Senneville to Isle aux Tourtes when a violent storm arose, and fearing for the safety of his companions and himself he called upon the *bonne Sainte Anne* to send help. Arriving safely at his destination, he did not

of the island, about 1672, to the brothers Louis and Gabriel de Berthé. This fief with several others was situated on the present road to Senneville.

Champlain in his *Voyages*, where he recounts the happenings of the year 1613,—the year when he made his disappointing trip up the Ottawa to find the great western sea,—says:

"I set out on Monday, the 29th of May, from Isle St. Helene with four Frenchmen, and one savage, a parting

salute being given me with some rounds from small pieces. This day we went only to the Falls of St. Louis [The Lachine rapids], a league up the river, the bad weather not allowing us to go any farther.

"On the 29th we passed the Falls, partly by land, partly by water, it being necessary for us to carry our canoes, clothes, victuals, and arms on our shoulders, no small matter for persons not accustomed to it. After going two leagues beyond the Falls, we entered a lake [St. Louis] about twelve in circuit, into which three rivers empty; one coming from the west, from the direction of the Ochateguins, distant from one hundred and fifty to two hundred leagues from the great Falls [Niagara]; another from the south and the country of the Iroquois, a like distance off [the Chateauguay]; and the other from the north and the country of the Algonquins and Nebicerni, also about the same distance [the Ottawa]. This river on the north, according to the report of the savages, comes from a source more remote, and passes by tribes unknown to them and about three hundred leagues distant.

"This lake [St. Louis] is filled with fine large islands, containing only pasturage land, where there is fine hunting, deer and fowl being plenty. Fish are abundant. The country bordering the lake is covered with extensive forests. We proceeded to pass the night at the entrance to this lake, making barricades against the Iroquois, who roam in these regions in order to surprise their enemies; and I am sure that if they were to find us they would give us as good a welcome as them, for which reason we kept a good watch all night. On the next day I took the altitude of the place and found it in latitude $45^{\circ} 18'$. About three o'clock in the afternoon we entered

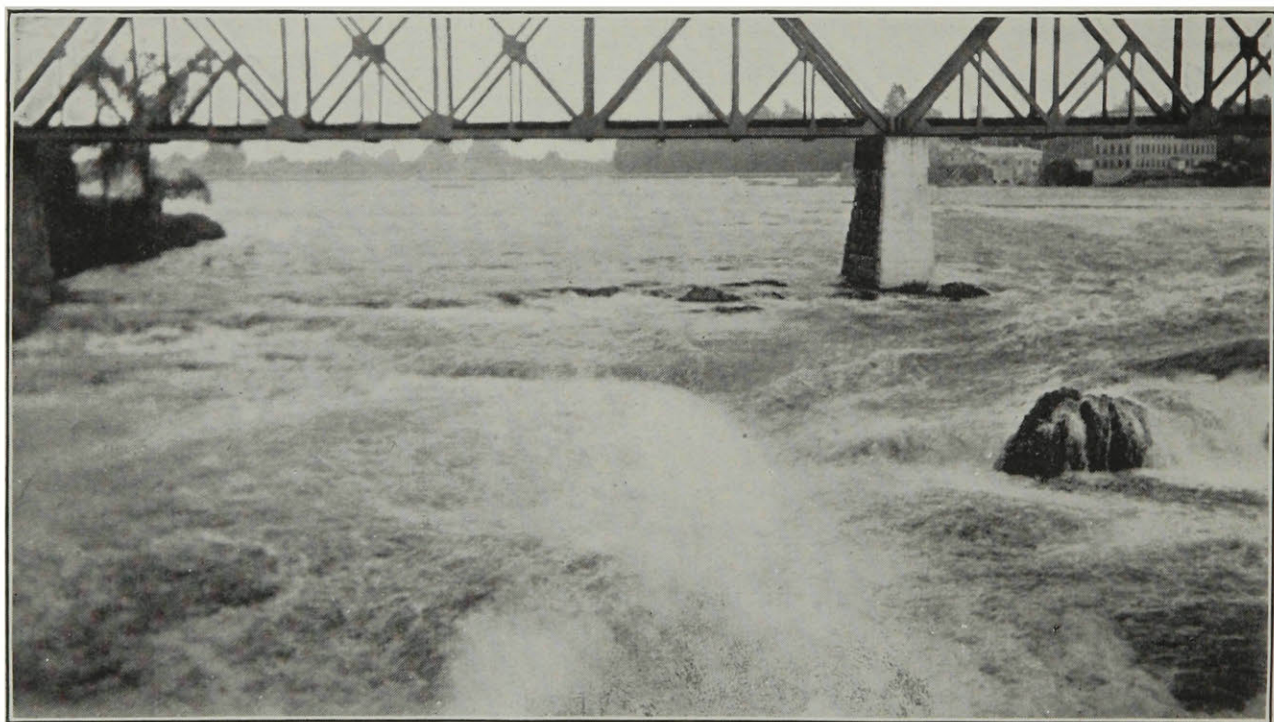
the river which comes from the north, and, passing a *small fall* [the rapids under the railway bridges] by land so as to favor our canoes, we proceeded to a little island where we spent the remainder of the night." Thomas Moore, nearly two hundred years later, was inspired by the threatening danger of the same "small fall" to write the lines that have become, by common consent, the national boat song of Canada. Does he, by the way, when he sings, "Saint of this green isle! hear our prayers," invoke the same good saint that Breslay had so happily called to his aid a century before? Moore is said to have stayed in the house now occupied by the Bank of Montreal, but which at that time was a North-West Company's trading post. I have quoted at some length from Champlain's *Voyages*, but I think the interest of the subject justifies me. (*) The details of the trip from St. Helen's Island in the harbor of Montreal (it still bears the name that Champlain gave it in honor of his wife), to the "small fall" at St. Anne, is, to all of us living in the district, full of interest. It is a far cry from Champlain to Moore, and from Moore to us, but as we look at the swiftly flowing waters of the "small fall," a common bond of interest seems to squeeze out the intervening years and to bring us very close together.

Although Champlain passed the site of St. Anne early in the seventeenth century, no settlement was made at the west end of the island until sixty years later. If you walk along the river road toward Montreal, you will come to a small bay about a mile from

(*) I have used the edition of *Voyages* edited by Mr. W. L. Grant, and published by Charles Scribner's Sons, to whom I make acknowledgments.

the College where the road turns sharply to the north. Here towards the last quarter of the seventeenth century the first mission was established and put in charge of the Abbé D'Urfé, a scion of an old and noble French family, and a relative of both Fénelon, the celebrated French author and orator, and Colbert, the Foreign Minister of Louis XIV. It is rather interesting to try to imagine the feelings of such a man as D'Urfé, brought up in the midst of the trivial artificialities and the brilliant culture of

of the fiercest of all the Indian tribes, who at this time were smarting under what they felt to be an act of supreme treachery on the part of the French. It made no difference that the French were really the innocent victims of a Huron chief's jealousy. Innocent or guilty, the practical result to the French inhabitants of Montreal was the same. The primitive law of revenge was in full force, and the massacre of Lachine was the climax of that bloody drama into which D'Urfé and his mission were



Waterfall under the Railway Bridge at Drummondville, Province of Quebec. Taken at 8 p.m. August, 1911; the effect obtained by five repeated exposures of $\frac{1}{100}$ seconds.

the gayest court in Europe, when introduced into a place where human nature was to be seen in the raw, and where death in its most violent form stared the white man in the face from every bush. But whatever his feelings were, they did not appear in any way to chill the ardor with which he went about his dangerous work. Think what it meant. The spot where D'Urfé's mission was established was almost twenty miles from the fortified station of Montreal, exposed to the sudden attack

introduced. It is significant that during the last decade of the seventeenth century, no records were sent in from the new parish of St. Louis, as it was then called; and the conclusion is that all the inhabitants of the western end of the island had fled to Montreal for safety when they saw the gathering clouds. Bay D'Urfé is such a quiet peaceful spot to-day that the records speak of events which seem to have happened in another world.

About three miles north west of this

Bay with its stirring memories is another place dear to the heart of the antiquary. We cannot boast of many "storied ruins" in Canada, but the name *Senneville* will always be associated with one old fortified chateau of great interest. I refer, of course, to the picturesque ruins on the grounds of Sir Edward Clouston. Although in a state of extreme dilapidation, they still give to the curious visitor a good idea of what a fortified country house of two centuries ago looked like. A few straight lines of crumbling masonry two or three feet high, and a well preserved corner showing one of the loop-holed bastions, is all that remains of this old building. Formidable in its day against the assaults of a primitive people, it now stands in its tranquil old age in the midst of lawns and shrubbery, pondering over the heroic deeds of brave old days. Jacques Le Ber, a merchant prince of Montreal, and the famous Charles LeMoyne bought the fief on which this chateau stood, about 1679, from DuGué, who had come to Canada as an officer in the crack Carignan regiment. DuGué had received the fief as a grant from the Sulpician fathers, the seigneurs of the island, but he seems to have abandoned the place some years before the sale was made. The new owners carried on for some time a brisk trade. Then a division of the property took place, and LeBer became the sole owner. Later, in virtue of this ownership and when he had been granted a patent of nobility by the King, he added to his own name the sonorous title, *de St. Paul de Senneville*. To make a long story short, the estate passed through the hands of three direct descendants of LeBer, the last of whom, embarking on a ship for France shortly after the British conquest, was drowned with all

his family when the ship was wrecked. Thus in less than sixty years after the death of its founder, the direct line of the family of LeBer, Sieur de Senneville, came to an end, and the fief passed into other hands.

Another point of interest in the neighborhood of St. Anne is Isle Perrot. Lying to the south of the village, it divides the waters of the St. Lawrence and the Ottawa, and when these rivers formed the main lines of traffic it made an ideal trading place. This thought apparently struck the mind of a young French officer who in 1669 came to Canada to seek his fortune. Perrot, through the influence of the Intendant Talon, whose niece he had married, soon after his arrival secured the desirable post of Governor of Montreal. Appointed to this position by the seigneurs of the island, he felt that they could also deprive him of his office if not satisfied with him. He accordingly had his commission confirmed by the king. From his advantageous position on this little island that bears his name he could intercept the fur traders on their way to the market at Villemarie, and thus get the pick of the furs. He soon began to grow rich; and the sense of his own importance increasing, he at last came into conflict with the arrogant Frontenac at Quebec. The quarrel was sharp and bitter; but ended, as was to be expected, in the discomfiture of Perrot, who was sent to France in disgrace. Here the king condemned him to a short imprisonment in the Bastille, "merely" in the words of the king's letter to Frontenac, "as a public reparation for having violated my authority." In the same letter, however, Frontenac was rather curtly reprimanded for his lack of tact. The railroads have destroyed the commercial importance of Isle Perrot, but one can never

glance across the Ottawa at its low, tree-clad shore without thinking of this enterprising, hot-headed soldier-trader of the seventeenth century.

To the reflective mind, possibly the greatest charm of European scenery is the invisible world that lies behind what is actually seen. I mean that world of ghostly forms which throng the scenes of their earthly activities, and which under the power of the imagination come crowding and jostling each other from the past centuries. If in comparison with these old world scenes, St. Anne is of yesterday, still it is old as places are reckoned in America. And for those who have

eyes to see and ears to hear, the phantoms of a long line of men and women whose determination and zeal was almost more than human, still haunt the places where their lives were passed. Nobles and peasants with the feudal bond yet upon them; high minded patriots like Champlain; ecclesiastics like Laval, zealous for what they thought to be the truth; coureurs de bois, who had become more barbarian than the Indians themselves; American revolutionary soldiers; and British troops fresh from the Napoleonic wars; all these have passed by the spot which so long ago was placed under the guardianship of St. Anne.

MODERN FARMING.

A farmer's fossiliferous
Who thinks his cows corniferous
Will ever be lactiferous
 On bran or grass or hay.
Each barnyard covered over,
And a "silo" made of clover,
With fair per cent. of "stover,"
 Is the only modern way.

In raising crops albuminous
One fact is fairly luminous—
The need of the "leguminous"
 Is something one should know.
Unless your plants endogenous
From atmosphere hydrogenous
Extract a bit "nitrogenous,"
 You'll never make them grow.

Get "absorbents" aromatic
And a "float" or two "phosphatic,"
And from out your mental attic
 Have a care that you are rid
Of all former ways of mowing,
Planting, ploughing, seeding, sowing;
Hay and corn's no longer growing
 As your father thought it did.

—Frank Hill Phillips, in "*Puck*."

Evolutions in Dairying.

WILFRID SADLER, Assistant in Bacteriology.



WE live in a world and in an age of comparisons, and our point of view, as also our judgments, must be in keeping with the philosophy of the age.

If we choose to consider the mother of all industries, and for our present purpose, more particularly the Dairying branch of Agriculture, it seems to me that in very truth a proper appreciation of modern theories, practices and methods can only result in the fullest sense if one has some knowledge of early literature on the subject; an acquaintance with which helps one to logically follow the various steps which have brought us to the present stage in dairy practice.

Further, if we would have a legitimate pride in our profession, and much good will either we or our generation derive from the work if we be not saturated with such pride, it is an essential as well as a pleasure that we shall, as Hudibras has put it—"Make former times shake hands with latter."

In following such researches we may sometimes become a little melancholy, and even perhaps be somewhat pessimistic as we think of the comparatively small progress that has been made throughout the ages: yet nature, no matter how deliberate she may sometimes appear, is always sure; and the admiration of the wisdom and sound common sense of many of the earlier writers cannot fail to enthuse us and equip us with fortitude, with ambition, and with longings which will impel us to go forward with all our strength towards the goal of our high calling.

Historians tell us that they have evidence of the making of cheese in some parts of Switzerland as long as forty centuries ago, while the journeying of David to his brethren, engaged in the fight with the Philistines is not infrequently associated in our minds with the value which was placed upon cheese as a food in the days when Israel was at the zenith of her power.

Homer in his poems speaks of cheese made before his own time, and in 384 B.C. Aristotle described the various agents used in the coagulating of milk.

Coming nearer to more recent times, we find in Anthony Fitzherbert's *Boke of Husbandrie*, first published in 1532, sentiments which we oftentimes would do well to keep in mind in this our own day, when so much emphasis is justly and rightly placed upon experimental proof. One of the concluding passages of his book stamps him with the seal of science—"I am ready to revoke my saying, if anythyng have passed my mouth for want of learnyng. And to submitte myselfe to correccion and my boke to reformation. And as touching the poyntes of husbandrye, and of other articles conteyned in thys present boke, I will not say that it is the best waye and will serve best in all places, but I saye it is the best waye that ever I coulde prove by experyence, the which have been a householder thys XL yeres and more. And I have assaied many and divers waies, and done my diligence to prove by experyence which shoulde be the best waye."

Until very recent times, with just a few notable exceptions, there were scarcely any books on dairying in

particular, and for historical information search needs to be made in the various works on general agriculture. As concerning Britain, it is the writers of the middle and latter part of the eighteenth century to whom we owe so much:—Marshall, whose *Rural Economy* of certain Counties will ever remain a standard work in agriculture, dairying and rural economics; Twamley, whose *Dairying Exemplified* is generally considered among early writers as about the best authoritative work on the subject; Holland, whose “*Survey of Cheshire*” is as useful as it is rare, and a number of others.

The more one reads of these men, the more one instinctively feels how great is our debt of gratitude to them for having, by their thoughtful enquiry and calm reasoning, left behind them such a wealth of suggestions for future investigation.

Twamley himself must have had the creed of a true investigator, for we find him advising cheesemakers and buttermakers nearly one hundred and fifty years ago to study their profession and seek to know the reason “why”. His emphasis on the necessity for the most careful cleanliness is worthy of a twentieth century bacteriologist, medical officer of health, and government department of hygiene all rolled into one.

In saying “he has constantly been led to scrutinize into the real cause of any impediment or fault in the method of making cheese, from the first step of milking the cows to the completing or removing the cheese for sale,” “Before a certain cure can be found out or applied you must be acquainted with the nature and cause of the complaint,” he lays down the sound principle that to alleviate a fault is by no means the same as investigating it in such a

manner that under all reasonable conditions a remedy can be found and successfully applied.

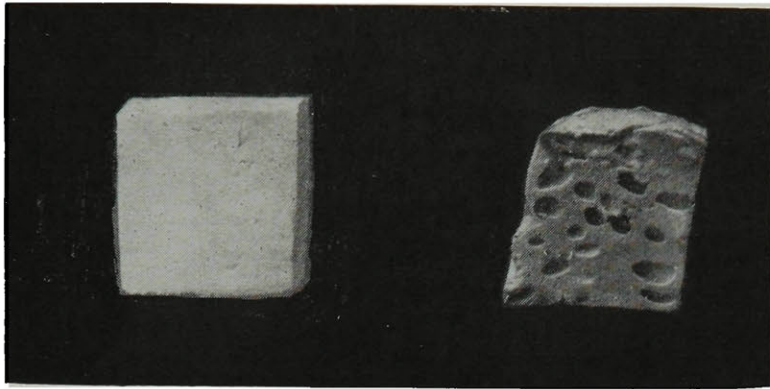
Another work issued some hundred years ago was the *Harleian Dairy System*, by Wm Harley. This writer conceived the idea of supplying to the city of Glasgow a milk of sound chemical and bacteriological purity, and consequently his book is concerned more with the production of milk for sale than with its manipulation into cheese.

“Above all things,” says Harley, “he resolved that cleanliness should extend not only to every utensil used in the concern, but to every individual in the establishment.” “It cannot be too often repeated that cleanliness in every possible respect is the life and soul of every branch of a dairy, from the milking of a cow to the last process of making butter and cheese and the slightest deviation from cleanliness cannot fail to be highly detrimental.”

It surely is not unreasonable to hope that after one hundred years, more attention should be paid by governmental and municipal authorities to the enforcement of such measures and regulations as shall insure a supply of clean milk to the rural and large city populations.

From the time of Harley until the present day instances have not been lacking of men who, by their own private enterprise—often at the cost of much time and even pecuniary embarrassment—have set themselves to produce and supply that which they conceive the public have a right to expect—if they will pay for it!

The works of Marshall, to which reference has already been made, are equally full of both information and suggestions. With regard to the period

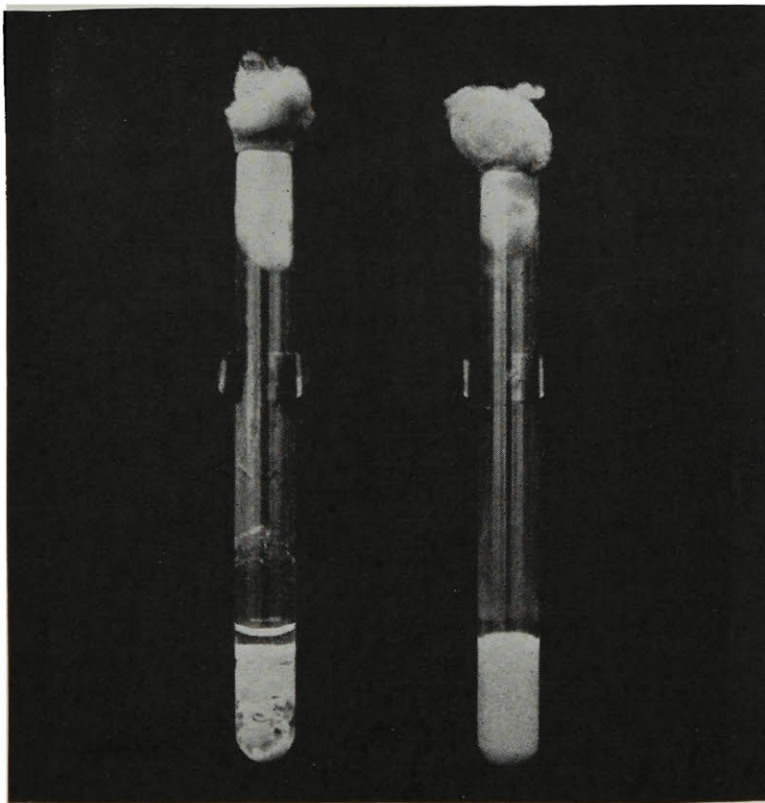
*a**b*

Effect of undesirable Bacteria on Cheese.

a A normal curd.

b Curd from milk contaminated with gas producing bacteria.

b Represents a very common trouble with which cheesemakers were met in the days of Marshall, and even to-day not infrequently.

*a**b*

Suitable and unsuitable starter.

a Tube of milk inoculated with an unsuitable organism.

b Tube of milk inoculated with typical lactic acid producing organism.

b Represents the aid which science gives to-day in overcoming the fault shown above—a suggestion of Marshall's in 1783.

of which he writes—about 1783—he is led to say: “At present the art (of cheese-making) is evidently destitute of principle: so far from being scientific, it is altogether immechanical; it may be said to be at present a knack involved in mystery.” After having studied the art of cheese-making in different parts of the country the same writer comes to the conclusion that three things are wanted:

1. A test of the quality of the milk.
2. A mode of correcting an evil quality.
3. A guage to ascertain the exact quantity.

From the context, it is evident that in his first point he is referring to what would now be termed a bacteriological test. Let us compare this suggestion with the principle enunciated as recently as 1909 by the greatest living English authority on the making of cheese—Mr. John Benson—who then wrote, “With a suitable food and water supply, milk produced in almost any district will make good cheese, provided that it is perfectly clean and in good condition.”

Is it possible to conceive any study likely to be more productive of fundamentals for original investigation than a careful perusal of these early authoritative writers?

In many factories and on some farms, a test for the cleanness of the milk supply is systematically carried out, but considering the comparative ease with which, say, the Wisconsin Curd Test or the Fermentation Test can be made, it is to be regretted that much more advantage is not taken of the value, both educational and monetary, which such tests offer.

Another vital point upon which Marshall touched was the question of correcting an evil quality in cheese-

making milk. Knowing, as we now do, that the faults and taints which appear at intervals in the dairy are the result of the action of undesirable bacteria, the practice of using starter has, within the last twenty five years, become fairly general: and it is safe to say that the application of this has had more influence on the improvement of the general quality of dairy produce than any other factor—always, of course, excepting the individuality of the maker.

When we realize that “a starter is a culture of those specific types of bacteria which best bring about the requisite amount of the right kind of acidity and the desired flavor; while it must have no undesirable qualities,” it is not difficult to appreciate the far-reaching influences of such an agent.

If, without intruding too much, one might refer to Holland and his *Agriculture of Cheshire*, it might be of interest to note that in 1808 he states, respecting Cheshire cheese—and the same remarks apply equally to all other varieties at that time—“That an exact uniformity does not prevail in this part of the process is no wonder. . . . where there is no precision there can be no just comparison; where no comparison can be made there exists no foundation for an attempt at uniformity.”

Without commenting at any length on this we cannot lose sight of the fact that to-day the leaders in dairy thought and practice are spending their energies, elocutional, scientific and practical, in the effort to bring about a greater uniformity in quality of every class of dairy produce.

One other observation of the same writer may be of somewhat general interest. He recommended “that a

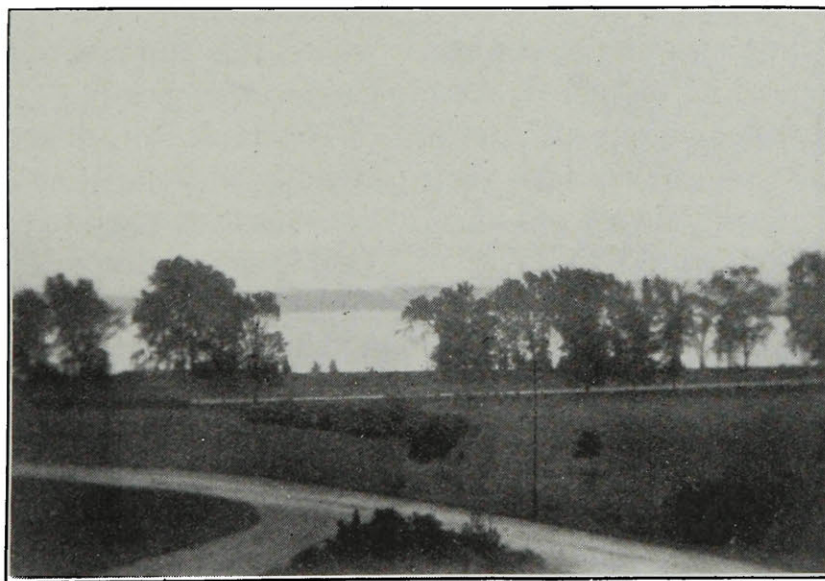
cheese farm of experiment might be established under the patronage of the Board of Agriculture, in order that something like scientific principles might be discovered on which to conduct the process." Now, while the British Board of Agriculture has for a number of years allocated grants to various colleges and schools engaged in agricultural, dairying and horticultural work, it is within the last few months that the Board has established a central research station for dairying—an institute which may not inappropriately be described as the fulfilment of the suggestions of a voice crying in the wilderness some hundred years ago.

Of the evolution in dairy utensils and mechanical contrivances, the latter of which are now such an essential in the equipment of all modern factories and dairies, nothing has been said; for the simple reason that a volume of respectable dimensions could

be compiled dealing with this phase of the subject alone.

Progress has been made in dairying, and progress of no mean order; but methinks that a little more and a little clearer appreciation of the ideals, of the failures and successes of the generations that are past and gone, would stimulate us to greater energies in the pursuit of the accomplishment of some still unrendered signal service in the absorbing field of dairying.

In conclusion, may we not take to heart a passage in one of Marshall's later writings—"It is my present intention, should leisure and opportunity favour it, to pursue the enquiry practically at some future time. Lest, however, my intention should not be accomplished, I have thought it right in this place to throw open to others the more essential part of that which I had laid up for my own future government."



A College Scene.

Decay in Harvested Apples and its Control.

By P. I. BRYCE, Assistant in Biology.



THE question has suggested itself, "Why should we be interested in the fungous diseases or rots of harvested apples?"

Much attention and a great outlay of money are being devoted to the suppression of diseases of the apple during the growing season. The primary control of disease in the field must ever be the chief interest of the orchardist, but I shall try to show that something may be done after the apple is ripened and picked to prevent its decay and extend its season. A lack of adequate and suitable supplies in the winter months is sufficient excuse for the proposition I suggest. This shortage is due largely to inability to preserve an abundant crop, much of which is sacrificed at low prices in the fall, and a large percentage lost by preventable decay during packing and shipping, or in storage.

In these notes are discussed some fungous diseases affecting stored apples, and the means of preventing their occurrence and development. Most of the paper is based on G. T. Powell's bulletin 78, U. S. Bureau of Plant Industry, "The Apple in Cold Storage," while publications of the Department of Agriculture, Ottawa, were consulted. Full descriptions of the fungous diseases are given in Duggar.

A few of the many troubles are: The Apple Scab, *Venturia pomi* (Fr.) Wint; the Pink Mould, which grows on scab, *C. phallothecium roseum* Cda; Brown or Bitter Rot, *Glomerella rufomaculans* (Berk.) Spaulding and von Schrenk; Black Rot, *Sphaeropsis malorum* Pk.;

and Soft Rot, or common blue mould, *Penicillium glaucum*. All these diseases occur in Quebec Province, but to what extent is not yet known.

Apple Scab occurs widely in hot, moist summers, and is probably the most widely known fungous pest. Not only destructive by making fruit worthless or of poor quality, it is followed by other moulds and decays. Growth of scab itself on the fruit may continue after picking, if apples are not kept at low temperatures.

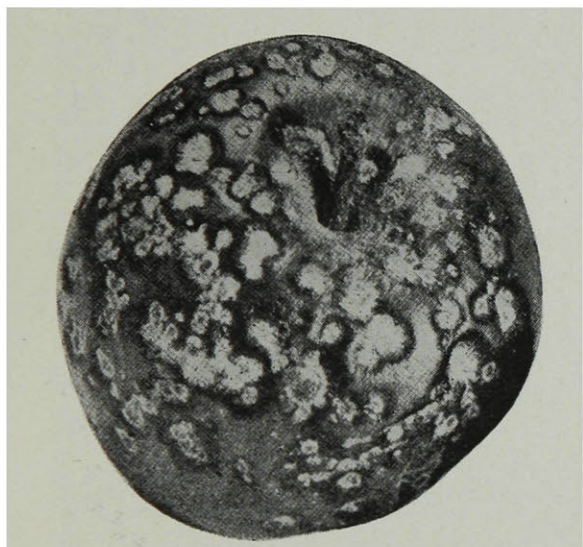
In hot and moist summers scab may destroy or reduce in value 25 to 30 per cent. of the crop. There are two stages of the disease. One on the fruit, twigs, and leaves in spring and summer causes deformations in some varieties of fruit while the leaves are spotted or even curled up. Wind spores, or conidiospores, spread the disease, but it winters on fallen leaves where the cup-spores develop and are shed in the spring.

The Pink Rot, or mould, which occasionally develops on the scab spots, does most damage to fruit after storage, and is especially to be feared in R. I. Greenings.

The Bitter Rot is thought to be the most serious apple disease of the United States, where an epidemic in 1900 caused an estimated loss of ten million dollars. The disease causes cankers on twigs and limbs, described as sunken spots with broken or cracked bark. Spores from the cankers infect the early diseased fruit, which then shows spreading lines of small brown spots radiating from a centre. Pustules on the spots produce wind-borne

spores, spreading the rot to other fruit. There is also a perfect or ascus stage. The winter may be spent in windfalls on the ground, but early summer infection is supposed to be spread mainly from the cankers on the tree. Duggar says: "Bitter rot can spread with alarming rapidity, causing enormous devastation within a week."

Black Rot and Canker of the Apple, or New York Apple Canker, was reported to this Society as being present in 1909, and occasionally in 1910. It is characterized at first by a brown



Fruit affected by Pink Rot.

(Cut taken from Cornell Bulletin 207.)

spot spreading over the whole fruit. On the tree occur cankers or depressed withered spots upon the large limbs. These are not always severe, but they may cause large wounds, girdle the affected branch, and so kill it. Standard winter varieties are susceptible, such as Baldwin, Wagener, Greening and King. The vegetative part of the fungus is brownish, and the spore-bearing organs burst through the outer tissues as a pustule. The spores are said to live as long as a year.

Though not classed as a disease, being rather a feeder on dead tissues, Soft Rot, or Common Blue Mould, is a

most destructive fungus in stored apples. Entering the fruit by some wound, bruise or worm-hole, the mycelium grows over the tissues and dissolves them, forming a greenish-blue mat. Conidia or wind-spores are developed in chains or branched organs, while cup—or ascospores—may also occur. Fruit in closed barrels is apt to suffer heavily while awaiting repacking, if kept at all warm. By storing no over-ripe or injured fruit, Blue Mould can be avoided in part. When it begins it makes rapid progress, even at low temperatures.

While we have thus numerous diseases in stored apples, up to the present the chief means of control is storage at low temperatures; or, if the stock is to be shipped at once to the market in iced cars, prior refrigeration by the circulation of cold air currents is most desirable. This process, sometimes called pre-cooling, has been experimented with and shown to be a success. The object thus achieved is to remove the warm conditions under which decay thrives, and to prevent the fruiting of fungi, with subsequent spread of the disease.

To insure quality, for fruit does not improve in market grade in cold storage, careful packing, with rigid exclusion of diseased, bruised and wormy fruit, is most essential. If the fruit can be placed in really cold storage it need not, and should not, be packed till mature and well colored. Fancy fruit may be picked as it ripens, as many specialists already do. Packing and grading are best done as soon as the fruit is picked. The prevalent practice of repacking in frost-proof warehouses owned by buyers results in heavy losses from rot in the delay before repacking, and from bruising of the ripened and softened fruit. According

to the Cold Storage Commissioner, "The shrinkage in repacking is a direct loss amounting to a very large sum." Delay in cooling was observed last fall to result in a loss of about sixty barrels of russets out of one hundred and fifty stored for some three weeks before repacking. This fruit was held at out-door temperatures in a frost-proof

after picking, 'f the weather be warm, in order to insure it against the unusual development of the fungous rots." He finds that "A delay of two weeks before storing (in the cold) caused a loss from decay or scald of from forty to seventy per cent." One has noted that fruit, notably Fameuse, picked while wet, and "headed up" in the



Pink Rot encouraged by custom of Piling in Orchards.

(Cut taken from Cornell Bulletin 207.)

storage in tightly closed barrels, just as picked from the tree.

Early, delicate or very fancy fruit may be packed best in small, easily-ventilated packages. Prof. Reynolds, Ontario Agricultural College, has shown that apples packed in fifty-pound boxes cooled more quickly than similar fruit in barrel quantities. G. T. Powell states: "It is of the greatest importance that the fruit be stored immediately

barrels still damp, developed a disease called by some packers "ink spot." The bright red coat shows black spots and the fruit must be culled out. Packages, however, in storage, should be well closed to avoid wilting by evaporation.

For the purposes of the average householder and small orchard owner the winter climate of this Province affords proper temperatures for storage

in frostproof cellars, root-houses, or preferably in a dry fruit room above ground level. Proper ventilation at night in the fall months should enable the small buyer to take advantage of the lower price and larger choice of rot-free fruit in the autumn. Only the best grades should be purchased.

The growers for commercial purposes should keep their crop in low temperatures under control if the late winter and spring market is to be supplied. They will be able, by rapid cooling and storage at a temperature of 31 to 33 degrees Fahrenheit, or as near as possible to 32 degrees, to market fruit in first-class condition, free from rot, in April, May, or even June. Only prime apples will keep so long, and while in storage must be under observation so that they do not over-ripen in the barrel.

Many of the fungus decays have their progress quite arrested at 32 degrees F., though black mould and soft rot, or blue mould, keep on growing slowly. Cold storage fruit when properly ripened keeps better than if stored before real maturity. Ripe fruit is notably less hurt by Brown Scald in which the natural ferments are supposed to cause the discoloration.

Powell shows by the following table that wrapping fruit helps to preserve it against decay. Wrapped and un-

wrapped fruit was kept at 31 to 32 degrees F from the time it matured till the twenty-ninth of April following.

AMOUNT OF DECAY NOTED ON APRIL 29TH OF FRUIT STORED PREVIOUS FALL IN BUSHEL PACKAGES :

Variety	Wrapped in News- pa per per cent. decay	Unwrapped per cent. decay
McIntosh Red (a)	7.7	15.0
McIntosh Red (b)	19.7	32.0
Northern Spy	5.6	52.0
Wagener	38.0	63.0
Wealthy	42.0	60.0

It should then be worth while to remember in regard to our standard fruit, the apple, that fungous diseases may be arrested or prevented by rapid cooling and storage at freezing point, or thereabouts; that it should be matured and properly colored, though not overgrown, to give the best keeping and market quality; that the best fruit is got by picking over the tree several times; that the best of grading and packing is desirable; that delay before storing, or allowing apples to heat hastens rotting; that repacking is to be avoided; and that fruit keeps best in small closed packages where it cools quickly. Lastly, a fruit wrapper retards ripening, preserves color and firmness, and prevents the spread of fungous spores.



Plant Breeding Methods as Depending upon the Biology of the Flower.

By DR. M. O. MALTE, Dominion Agrostologist.



IN no part of biology is the controversy between experience and speculation, between facts and hypothesis, between actual knowledge and belief, greater than in that part which embraces the problems of evolution. Developing from general ideas of a philosophical rather than of a scientific nature the theories of evolution of the early days did not distinguish, as distinctly as those of more recent years, between the evidence of observations and the creations of imagination, the result being a kind of combination of philosophical speculation with experience. When, with the appearance of "Origin of Species," a theory based on a great number of facts was presented, the problems of evolution were given a more solid foundation than they had ever enjoyed before. In recent years, however, the Darwinian theory has been seriously shaken, its weakest point being

too firm a belief in the scientific value of often misleading practical experiences. Many interpretations of evolutionary phenomena considered indisputably correct by the Darwinian school are now-a-days looked upon with suspicion, or have even been proved to be the results of an imperfect analysis of the facts given. For this and other reasons the science of evolution and its practical application, the science of breeding, are at the present time attacked from an experimental *analytical* standpoint more earnestly than ever before.

On the whole, the historical development of the science of plant breeding tends to show a gradual restriction of the material foundations upon which the different theories and methods are based. Thus, the species is now considered too broad a basis for plant breeding in general. It has been replaced, especially during the last two decades, by the "elementary species," the "pure lines" and the "unit characters."

In view of this, the following plant breeding methods are generally recognized:

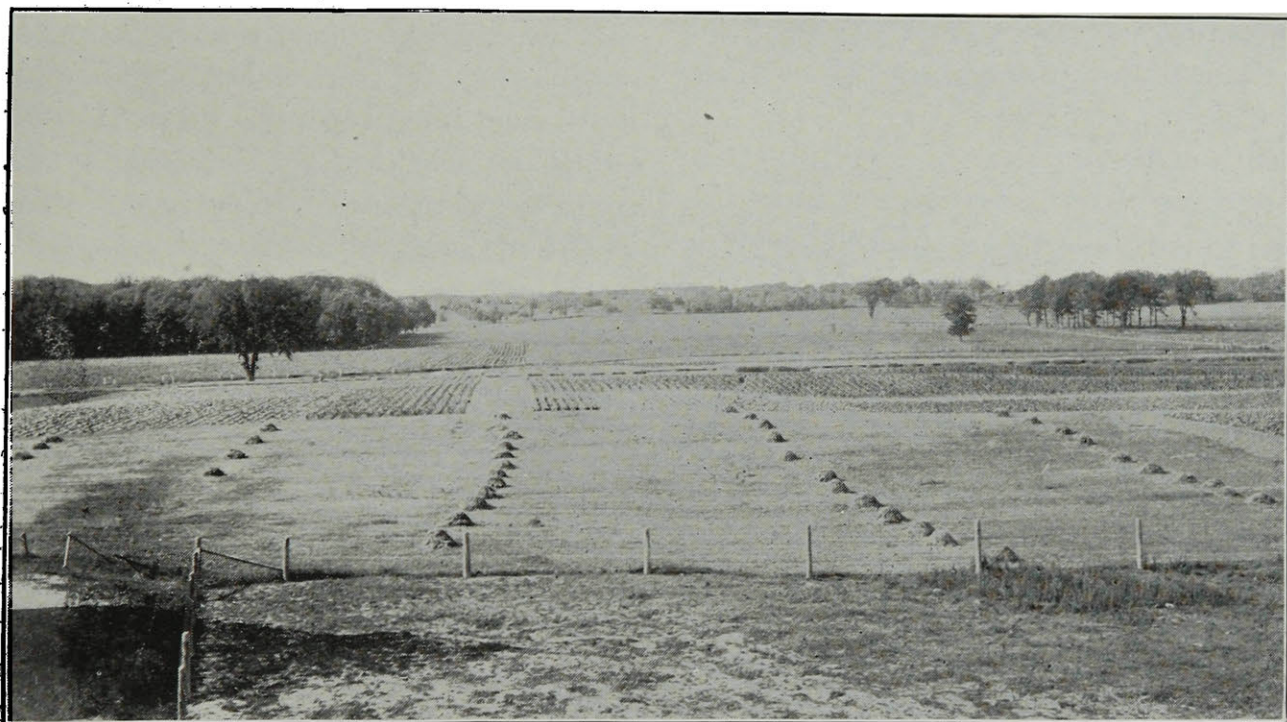
- (1). Breeding by means of mass-selection.
- (2). Breeding by means of artificial hybridization.
- (3). Line breeding.

It is true that the use of any of these methods depends, to a very great extent, on the object in view, but, on the other hand, it is equally true that their suitability and value are most

The production of seed in plants can be brought about in three main ways:

- (1). By parthenogenetic development of the seeds.
- (2). By self-fertilization.
- (3). By cross-fertilization, established either by the aid of air-currents, or by the aid of insects.

To the first of these biological groups of plants belong those genera and species which are able to produce germinable seeds without any fertilization at all. A great number of species



Breeding Plots at Macdonald College.

closely connected with the biology of the plants concerned. A method, that can be used to advantage in breeding work within a certain plant-species, may prove rather doubtful or even quite ineffective within another, just because of the biology of its flower. Biology of flower and hereditary transmission thus being intimately woven together, the plant breeder must adapt his methods of breeding to the biological peculiarities of the plants involved, as well as to the object he has in view.

(sub-species or elementary species, whatever their systematic rank may be) of the genera *Alchemilla*, *Hieracium* and *Taraxacum* have thus been proven to be able to produce normal seeds without the aid of pollen, and quite a number of them have, in fact, no pollen at all. In other genera, for instance *Thalictrum* and *Rosa*, some species are "facultatively parthenogenetic," that is to say, their flowers or some of the flowers are able to develop seeds without the aid of any pollen, should this prove neces-

sary on account of lack of fertilization.

It is evident that, in this group of plants, breeding by means of artificial hybridization must be of minor importance. This is especially the case where no pollen is formed or where it is unable to germinate on the stigma of the pistil. In that case artificial hybridization is simply out of the question. Mass-selection and line-breeding are the only methods that can possibly be used, the former effecting a kind of artificial weeding-out of a certain number of undesirable types, the latter resulting in the isolation of a certain "elementary species."

Although as yet of no practical importance from a breeding standpoint, the sexual biology of parthenogenetic plants is well worth mentioning in this connection, because it helps us to a clearer understanding of the breeding methods used with those plants that are normally self-fertilized. To this biological group of plants belong, among others, wheat, barley, oats, peas and vetches. All these plants, which are so important from an agricultural point of view, are, as is well known, automatically self-fertilized, that is to say, the pistil is powdered with fecundating pollen from the stamens of the same flower, cross-fertilization being usually safeguarded against by the fact that fertilization takes place before the flowers are opened, or by the fact that they do not open at all.

The self-fertilizing plants are of special interest not only on account of their biological peculiarity, but also because it is through the close study of them that the method of line-breeding has been developed.

A typical self-fertilizing plant belongs in a way to the same biological class as a parthenogenetic plant; that is, it has,

with rare exceptions, no chance to alter the hereditary qualities of its pedigree by the introduction of foreign blood. The fertilization of a flower in the case of a self-fertilizing plant, affecting as it does a combination of characters possessed by its own sexual organs, the resulting progeny must in all essential points, that is to say, in all characters of an hereditary nature, become a close reproduction of its parent.

With this in view, it is easy to understand why, among heterogeneous plants, such as the cereals, mass-selection, for the production of perfectly uniform strains, has become of less importance than has line-breeding. The former being a selection of several types, treated "en masse," it must necessarily, in the majority of cases at least, result in the production of "varieties" which, in fact, are mixtures of several biologically and morphologically different biotypes. When, however, line-breeding is practised the progeny of each single biotype is kept separate, the result being the production of a strain, all individuals of which possess the same hereditary qualities as did the mother plant. All the plants, originating from the same mother, constitute a "pure line" which will remain pure, as we are entitled to believe from investigations so far, as long as foreign elements are excluded.

The breeding method, known as the "Vilmorin system of selection" or "System of Pedigree or Separate Culture," used with so great a success in polymorphous species, such as wheat, barley, oats, peas, and vetches, is based on, and made possible by, the fact that the plants involved are normally self-fertilized. It consists simply of the selection of single individuals of a desired type, the isolation of the progeny of each individual, and the comparative

testing of the different strains thus obtained.

The fact that it is an easy matter to keep the progeny of self-fertilizing plants pure, and the fact that the individual flowers fertilize themselves, has been of the utmost importance for the clear understanding of hereditary problems in the kingdom of plants. The comparative facility with which the transmission of hereditary quantities can be followed in self-fertilizing plants enabled Mendel to work out his famous theory of unit characters and their behaviour in artificial crossings, and enabled Johannsen to bring about a logical understanding of the advantages of line-breeding. The Mendelian theory as well as the fundamental work of Johannsen are so familiar to students of biology, that a discussion of them is, in this connection, rather superfluous.

When discussing the general application of plant breeding methods to cross-fertilizing plants, it must be kept in mind that cross-fertilization is quite a complicated phenomenon which cannot be treated summarily without endangering misinterpretation. In this connection it may be sufficient to point out that there exist two biological groups of cross-fertilizing plants, viz., those which can be self-fertilized, and those which can be cross-fertilized only.

To the first group belong, among others, all our fodder grasses. As self-fertilization is able to provide for germinable seeds, it is evident that breeding of the said grasses can be carried out along the lines which have been indicated for the strictly self-fertilizing plants. Breeding from single individuals—line-breeding—can thus be successfully practised, uniform strains being the final result. As, however, the danger of cross-fertilization always is imminent, special precautions must be taken to

keep foreign pollen from interfering with the results. This can be done only by effective isolation. At an early stage of the breeding process, when the breeder has to deal with individuals chosen as mother plants, the isolation can be simply effected by covering either the entire individual, or certain single heads of it during the flowering period. Later, when the constancy of a certain individual type of a superior quality has been fixed, and the breeder wants to secure a great supply of pure seed, other methods of a more practical nature must be employed. The morphology of the underground system of the grass worked with—provided that it is a perennial—then comes to the breeder's help. As is well known, it is an easy matter to divide, vegetatively, a grass tuft into a great number of small plants, which, if properly cared for, will quickly reach the same size and strength as that possessed by the original mother plant. In this way it is possible to obtain, by repeated vegetative divisions, thousand's of individuals from one single mother plant. Although individually distinct, all those plants are biologically *one single plant*, and they are consequently characterized by exactly the same biological and morphological properties. Cross-fertilization between different individuals can therefore by no means be compared with cross-fertilization in an ordinary field, composed of a motley collection of different biotypes. Although seemingly a cross-fertilization, it is in reality a self-fertilization, affecting the hereditary qualities of the progeny exactly in the same way as does fertilization of a flower with its own pollen.

In many grasses, however, cross-fertilization seems to be favoured. The stigmas of the pistil protrude from between the glumes of the spikelet previous

to the appearance of the stamens, thus giving the flower a chance to be fertilized by pollen from another individual. Such a cross-fertilization seems to be rather beneficial, the progeny as a rule being stronger than if self-fertilization takes place. This is quite in accordance with the numerous observations brought together by Darwin in his book, "The Effects of Cross and Self-Fertilization in the Vegetable Kingdom," and leads us naturally to those plants which are unable to produce germinable seeds with the help of their own pollen.

To this group belongs, among others, our ordinary Red Clover. Already Darwin made the observation that isolated Red Clover plants are unable to produce seeds, while plants exposed to the visits of insects seed abundantly. The experiments of Darwin referred to, endeavoured to show that the visits of insects, especially bumble-bees, are necessary for seed production, and that flowers protected in any way remain sterile. Later, numerous experiments have brought about the very interesting fact that a plant, the flowers of which have been pollinated by their own pollen, is unable to produce any seed. It does not matter, by the way, whether a given pistil is impregnated with pollen from the same blossom, from the same head or from any other head of the same plant. The result will be exactly the same. No seed is pro-

duced. A given pistil must be powdered with pollen from *another individual plant*.

In breeding plants such as Red Clover it is consequently useless to start line-breeding. As pure lines do not exist it is also impossible to produce perfectly uniform strains. Breeding of red clover and biologically alien species must be a combination of breeding by means of cross-fertilization and breeding by means of mass-selection.

From the above very brief and concentrated essay on the relation between breeding methods and the biology of the flower it will be seen that the former are most intimately connected with the latter, and that a proper understanding of the courses, which have to be followed in breeding work, is made possible only by a close study of the biological peculiarities of the plants concerned. As Bacon says: "Man is but the servant and interpreter of nature: what he does and what he knows is only what he has observed of nature's order in fact or in thought; beyond this he knows nothing and can do nothing. For the chain of causes cannot by any force be loosed or broken, nor can nature be commanded except by being obeyed. And so these twin objects, human knowledge and human power, do really meet in one; and it is from ignorance of causes that operation fails." (Novum Organum.)

Dry-Farming.

By R. SUMMERBY, B.S.A., Cereal Husbandry Department.



ON October 21st to 26th, 1912, The International Dry Farming Congress held its seventh annual meeting at Lethbridge, Alberta. This Congress, which is composed of farmers, grain-growers, university and college men, together with the leading agronomists from all part of the world, has as its purpose the furtherance of dry land agriculture and the more general application of its underlying principles. That this congress met solely to discuss "Dry-Farming" brings forcibly to our attention the important place which that subject has in modern Agriculture.

That ordinary farm crops during their period of growth require large amounts of moisture is a well-known fact. It has been calculated by various careful experimenters, both in Europe and America, that a crop of wheat in producing one pound of dry matter requires from 338 to 460 pounds of water, with oats from 375 to 665 pounds are needed, and for each pound of dry matter in an average farm crop 450 pounds of water are required. According to these results one acre inch of water will produce 2.5 bushels of wheat, 10 acre inches would produce 25 bushels and 20 acre inches would be sufficient to give a yield of 50 bushels per acre. These figures, of course, do not take into account any moisture that is lost by evaporation, by percolation or as run-off water. Hence much more than the above quantities would be required; at least 20 acre inches for an average crop.

Six-tenths of the land area of the world does not receive sufficient pre-

cipitation to supply the demands of continuous crop production. This area, if it is to be used for agricultural purposes, must be supplied with moisture either by irrigation or by some system of tillage whereby moisture can be stored up and saved from one year to another. Mead, the greatest authority in America on irrigation, states that if every drop of moisture that falls on the mountains and hills could be made use of for irrigation purposes, a condition of affairs obviously impossible, only about one tenth of this land could be irrigated. This makes it that over five hundred million acres of land in the United States can be made productive, only by the economical conservation of water by some system of tillage. In Canada none of the prairie provinces have over 20 inches of rainfall, while in some sections the rainfall is as low as 10 inches per annum, hence these areas must also be reclaimed by more or less intensive systems of "dry-farming".

Dry-farming is not, as the name might lead one to suppose, the growing of crops without moisture, but is the growing of crops with a minimum of moisture. By the most intensive system of dry-farming, it is possible to grow crops where the rainfall is as low as ten inches. Where the rainfall is as high as 20 inches, profitable crop production is a simpler matter, but even where the precipitation is as high as 25 to 30 inches, some of the underlying principles of dry-farming are applicable. To a certain extent then, all farming without irrigation may be called "dry-farming."

As ordinarily spoken of, however, it is confined to regions where the rainfall is around 20 inches or less. Under such conditions, it is necessary to carry moisture over, not only from one season to another, but also from one year to another. In these regions moisture is the limiting factor and not fertility, as is the case in humid districts.

The nature of the soil and subsoil determines largely whether dry-farming can be practiced successfully in any region. All soils are not suitable for dry-farming purposes. Those of sandy and gravelly composition are too loose and open, allowing water to leach away readily. Those with sandy or gravelly subsoil behave similarly, while clay soils or those underlaid with hard pan do not allow the rains to be absorbed sufficiently fast and thus do not hold the water. The best soils for dry-farming purposes are those of a silty or loamy composition extending to a depth of at least six or eight feet. Soils of this nature because of their texture allow both of the absorption and retention of water, not being so close as to prevent absorption, and not so coarse that it will leach away as is the case with sandy or gravelly soils. Fortunately it is true that dry land soils are characterised by their uniformity and are usually of a silty or loamy nature, hence they are especially well adapted to dry-farming purposes.

The fundamental operations of dry-farming include a treatment of the soil that will absorb and retain as much water as is possible. Moisture may be lost by flowing off into ditches, etc., by percolating through the soil to the water-table and by evaporation. In dry-farming the treatment must be such that it will absorb all the

precipitation, that it will not lose it by percolation, and that very little will be lost by evaporation. To do this the surface of the soil must be made loose and open so that the water will be absorbed readily, and must have such cultivation as will retain the moisture. Deep plowing in the fall, frequent cultivation to form a mulch and summer tillage at intervals are essential in accomplishing this end.

In humid regions deep plowing would be apt to turn up the cold raw subsoil and so render the soil infertile, but as the subsoil in arid regions is just as fertile as the surface layers, it only loosens the soil, allowing it to take in more of the precipitation. The deeper a soil is plowed the larger is the soil reservoir and the greater is its capacity for absorbing water. Further, the soil is aerated to a greater depth and plant roots are allowed to penetrate more deeply, thus enlarging the area from which they can draw their requirements of plant food and moisture.

Fall plowing is much preferable to spring plowing, because it gives the soil a chance to absorb all the winter precipitation which in most cases is considerable. If plowing is deferred until spring a great deal of the rainfall runs away and very little time is left before seeding to store moisture. Further, fall plowing makes it that the soil becomes pulverized by the frost, and allows it to settle, so that it holds a great deal of moisture in itself; air spaces are closed and capillarity is established. With spring plowing the soil is apt to be loose and open, lacking capillary connection with the subsoil and hence not able to withstand drought.

Plowing should be done immediately after harvest, but if this is impossible

the land should be disced at once in order that no moisture may be lost by evaporation. If for any reason spring plowing has to be done, the land should be thoroughly packed before or immediately after seeding. This must be done to establish capillary connection with the subsoil, otherwise the soil itself would not hold moisture and would be apt to dry out.

Cultivation should be started in early spring as soon as it is possible to work the land to advantage and repeated frequently until the crop is from three to four inches high. After harvest, cultivation should be continued until plowing is commenced; sufficient cultivation must always be given to keep a mulch formed on the surface of the soil. The depth of this mulch will vary with the soil and with the climatic conditions; where the climate is very dry from four to five inches are necessary in the more sandy regions, while two or three inches are sufficient on heavier soils and in less arid sections.

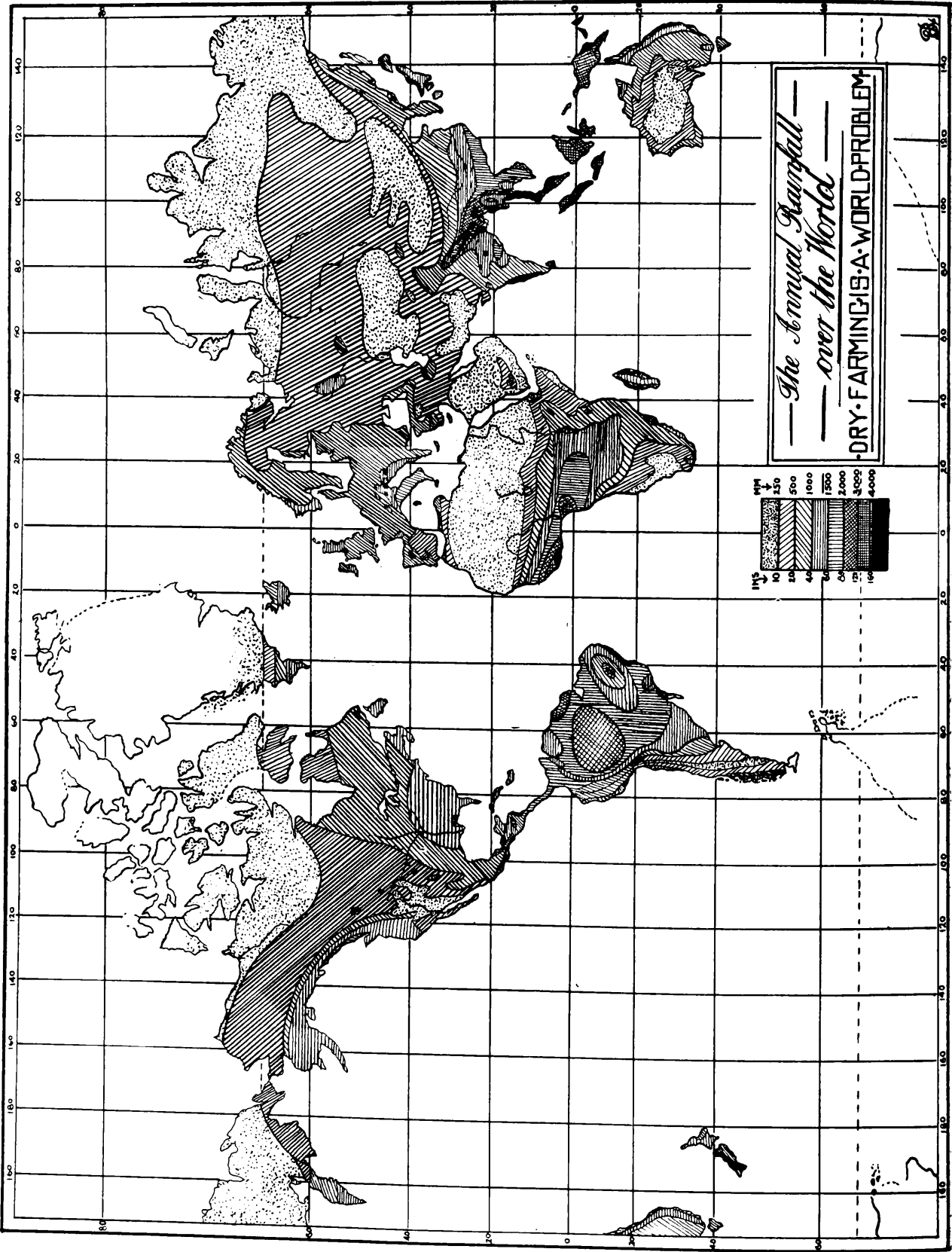
Even by practicing the most intensive system of tillage, sufficient moisture cannot be conserved without occasionally summer-fallowing or summer-tilling the land. This is done in an attempt to conserve the total precipitation of one season and carry it over to aid in supplying moisture to crops in the following years. The frequency of this tillage depends chiefly upon the rainfall but also is dependant upon the wind, heat, and characteristics of the soil. Ordinarily it may be said that one year in two is not too often where the rainfall is between 10 and 14 inches; one year in three where the rainfall is between 14 and 18 inches, and one year in four where the rainfall is between 18 and 22 inches. The practice of summer

tilling consists in plowing the land either in spring or fall and cultivating sufficiently frequently during the following summer to keep a blanket of loose soil on the surface to act as a mulch. This cultivation may be followed either by the seeding of fall crops, or by spring seeding without plowing.

Apart from the different tillage operations in connection with dry farming, the choosing of drought resistant crops and the practice of thin seeding are important features in profitable production. All crops by no means require the same amount of moisture and also vary a great deal as to adaptability; this holds true not only of different crops but also of varieties of the same class. This makes it possible for the dry-farmer to discriminate and choose only those crops and varieties that are best suited to his conditions.

Wheat is a favorite dry land crop, the fall varieties being preferred where they do not winter-kill. Oats, barley and rye are also adapted to dry-farming purposes. Corn, sorghums and alfalfa are grown in rows and cultivated. The latter is being grown for seed, and indications are that alfalfa seed growing will be quite an industry in dry-farming regions in the near future. A great deal has been done and can be done towards making dry-farming more profitable, by the proper selection of crops and varieties.

The thick seeding of a crop makes it that a large number of plants cover the ground and so take up a great deal of moisture early in the season; if sufficient moisture is not present to bring such a crop to maturity a large number of plants either die or do not develop properly. This means that the resulting crop is very



inferior in yield or quality or both. By sowing only sufficient seed to produce the number of plants that will mature properly, one makes it that the largest quantity of good quality will be produced. If more than sufficient moisture is available than will be used up by the thin stand, the plants may then make use of their capacity to tiller and so effect the same result as thicker seeding. For this reason it is best to sow thinly and the crop will adapt itself to its environment if more than the usual amount of moisture is present.

The cultural practices in connection with the conservation of moisture, including summer tillage, deep fall

plowing to absorb the water, and frequent cultivation to retain the moisture, together with the choice of drought resistant crops and thin seeding, have made it that profitable production has been extended over a wide area. It may be said, however, that in many cases the advantages of dry-farming have been over-estimated and many people have expected more than it has been or will be possible to realize. But with the increasing knowledge of soils and the underlying principles of tillage, and according as crops and varieties better adapted to dry-farming conditions are discovered, increased areas of land will be brought under profitable production.

IN MEMORY OF MAG NOLIA.

"Why Pine," remarked the Hemlock,
 "Spruce up!" "I can't," he moaned,
 "I hear the woodsman's knock."

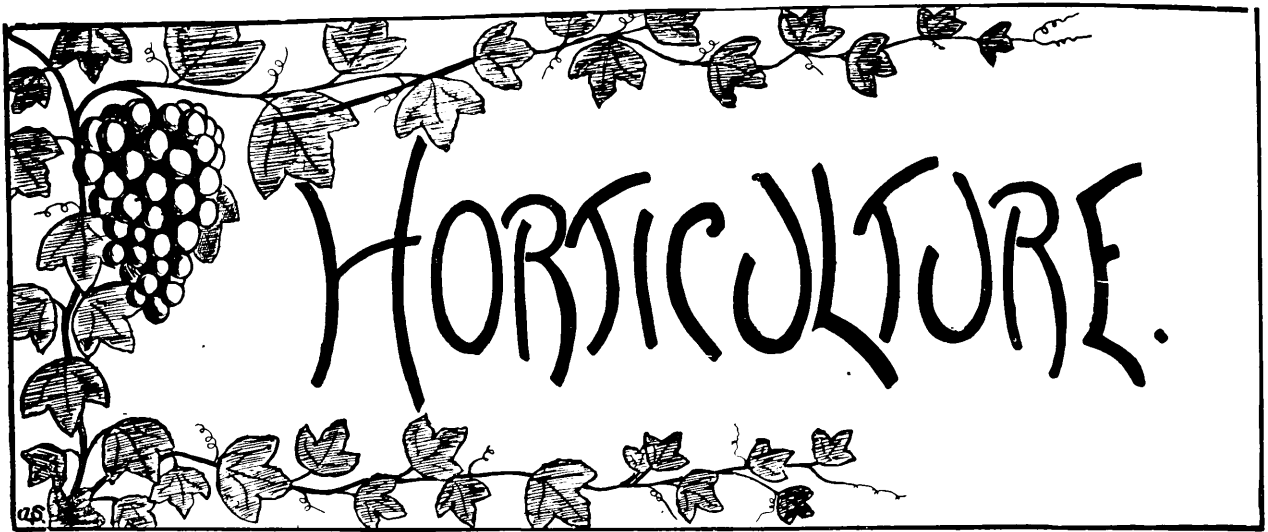
"Mahogany is something fierce,
 I can't Cypress my feeling,
 Please see my grave is Evergreen,
 Epitome—Now is Ceiling."

The Weeping Willow bit her Gum,
 (So Poplar was he), and now to
 Think—his time had come,
 Ne'er Sycamore would be.

"He Ma p'le out my roots," he cried,
 "And burn them into Ash;"
 The Sap rolled down his rugged side,
 "I'm sacrificed for Cash."

The woodsman smote him on his Chest,
 Not heeding his dismay;
 He laid the quivering tree at rest,
 And Side and Edged away.

—*Canadian Industrial Review.*



Fruit Growing in Canada.

By F. H. GRINDLEY, B.S.A., Ottawa.



DURING the fruit season of 1911, it was the privilege of the writer to visit practically all the fruit producing sections of Canada from the Atlantic to the Pacific, and the purpose of this short article is to give a brief resumé of the impressions gained upon that trip. To do so in any detail would be quite impossible in the space at my disposal, and I will therefore confine myself solely to those phases which impressed themselves most strongly upon me.

In Nova Scotia there has been a vast improvement in the conditions under which orcharding is being carried on, and this Province offers opportunities to the prospective Canadian settler which are not excelled in any other Province in the Dominion. In the counties of Hants, Kings and Annapolis, which comprise the main source of the Nova Scotian fruit output, there is not more than 10-15% of the land under fruit, and the unimproved land is only valued at from ten to twenty dollars per acre. Throughout this section large warehouses have been constructed at the

main shipping stations, and the methods of transportation appear to be very satisfactory. Numerous co-operative associations have been established, so that a uniform pack is secured, and there is no doubt that if the growers will fully realize the advantages to be gained from thorough spraying and systematic thinning of the fruit at the proper season, the output of high quality fruit will increase from year to year.

At present the port of Halifax does not have the facilities which are necessary for handling trans-Atlantic shipments, and it is sincerely to be hoped that this situation will be remedied so that more regular sailings of faster steamers may be assured.

In New Brunswick, too, the planting of orchards is going on rapidly, and the development of some sections, notably the St. John Valley, may be expected to be one of the features of the next decade. By means of the establishment of demonstration orchards throughout the Province, the Provincial Government is impressing upon the farmers the beneficial effects of the proper treatment of their orchards, in the hope that they

may adopt similar practices, and secure more satisfactory returns.

In the past orchards have been considered a minor and unimportant portion of their farms, and have been allowed to remain in sod for many years with the inevitable result that they have depreciated. As already stated, steps are being taken to remedy this state of affairs, and these orchards will probably be improved, and large plantings made of approved varieties.

orchardists in every possible way. The campaign which our old friend, Charlie Williams, has inaugurated in Prince Edward Island is making rapid strides, and I am sure all those who know him wish him every success in his endeavors.

It is greatly to be regretted that the Province of Quebec is losing the prestige which it has held for many years as a fruit growing Province, and unless steps are taken to improve the condition of



A well cultivated Vineyard—Niagara Peninsula.

In Prince Edward Island there are a few up-to-date fruit growers, but there has been a sad need of co-operation. Early varieties often go to waste and not enough late varieties are grown for home consumption. The average grower is ignorant of approved methods of orcharding and even of the best varieties to grow. Fortunately, the Federal Government has grasped the situation and has appointed a horticulturist for the Island, to assist the

affairs, there will be a serious decrease in production. In Abbotsford, St. Hilaire, Rougemont and Chateauguay there are some fine orchards, but in other parts of the Province (and even in those parts mentioned) many of the orchards are rapidly declining. There is an excellent market, both local and export, for Quebec-grown fruit, and a concentrated effort on the part of the growers which would have for its object the planting of hundreds of acres of the

fine dessert varieties, would do much to replace the Province in the position which it formerly held.

It is quite impossible to attempt to give in this article any conception of the industry as carried on in Ontario on account of the extensive area involved and the great variety of fruits which grow to perfection. From Essex and surrounding counties in the south-western part of the Province, through the Niagara Peninsula on the southern shore of Lake Ontario, to Prescott and Glengarry on the Eastern boundary, there is an immense territory devoted to the growing of fruit. In the eastern part of the Province the varieties of apples which succeed most are mainly the same as in Quebec, namely, the Alexander, Wealthy, Fameuse, McIntosh Red and Wolf River. Along the shores of Lake Ontario and Lake Erie a large number of more tender varieties are grown successfully. In the Niagara Peninsula are the principal commercial peach orchards of the Dominion and pears, cherries, plums and small fruits are also profitably grown.

This Province offers unlimited opportunities to anyone intending to take up the culture of fruits. The returns are satisfactory and the business is attractive and desirable.

Within a very few years the output of fruit from British Columbia will attain large proportions. This fact is ensured by the large areas of young orchards at present in existence throughout the Okanagan and Kootenay Valleys and along the main line of the C. P. R. from Sicamous to the Coast. In this Province the growers have confined themselves entirely to the box package for all their fruits, and find it in every sense satisfactory. A keen competition

is taking place in the Prairie Provinces between eastern and western fruit, the result of which is a matter of considerable interest and importance. Heretofore the Ontario growers have relied upon these markets to dispose of a considerable percentage of their crop, but with the growth in the output from British Columbia, it depends upon the buyer whether our eastern fruit will be able to hold those markets. There is no doubt that so far as quality is concerned Ontario fruit is superior, but the western fruit is of such large size and high colour and is packed in such an attractive manner that one is justified in suggesting that Ontario men "look to their laurels."

In many sections of British Columbia the rainfall is insufficient, and artificial means of obtaining water have had to be adopted. Irrigation companies have been formed at several centres, and the system of water supply is in most cases of a very permanent and modern character.

An attempt has been made to grow peaches in the southern part of the Okanagan Valley, but it is generally felt that on account of occasional severe frosts, apples are a safer crop.

There is probably more activity in orchard planting in this Province than in any other part of the Dominion, and the people are confident in the future of the industry. British Columbia fruit will soon exercise a marked influence on the markets of Canada and of more distant countries.

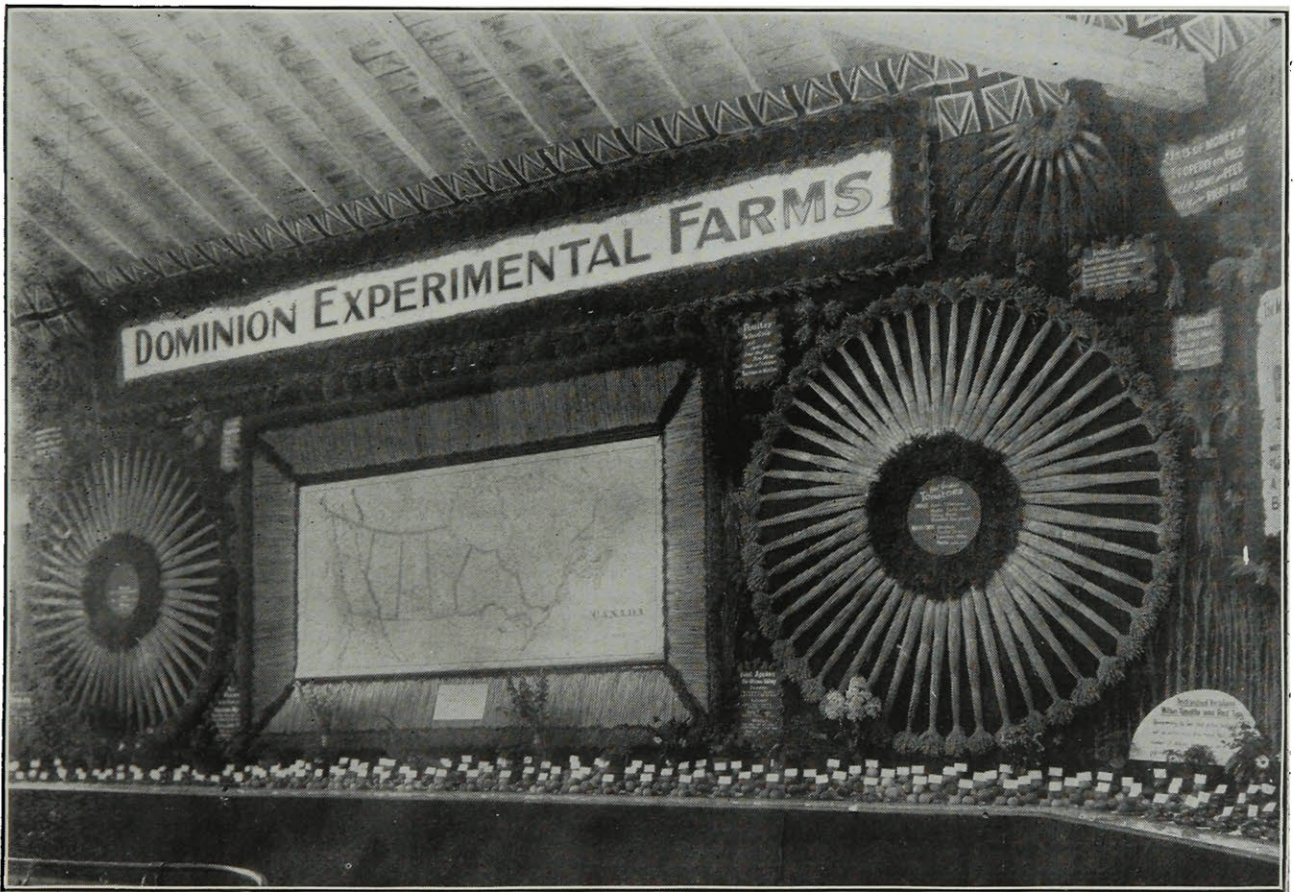
In conclusion, I may confidently state that the fruit industry of Canada was never in a more satisfactory position than at the present time and the field for advancement on the part of interested parties never brighter.

Macdonald Horticultural Club.



THE enthusiasts in Horticulture met to re-organize the club on October 15th, and elected the following officers for the session 1912-1913:—President, Ben. Richardson; Vice-President, A. C. Gorham; Secretary, H. J. M. Fiske Treasurer, O. Schafheitlin. Year Representatives:—Class '13, W. Middleton; Class '14, V. B. Durling; Class '15, to be elected;

inspection work for the Department at Ottawa. The paper gave the history, habits, effect and control of the canker. Disease-affected specimens were produced, which showed only too plainly the danger of ruination to our potato crop throughout the country, if extreme care is not taken. Any reader desiring information on "The Canker" can obtain it in Bul. 63 of the Botanical Department, Ottawa.



Central Experimental Farm Exhibit at Ottawa Exhibition.

Class '16, to be elected. Committee:—Mr. Archie Walker; Honorary officers, to be elected.

On November 1st the club enjoyed a well-prepared and instructive paper given by Mr. J. S. Dash on the "Potato Canker." Mr. Dash has made a special study of this disease, and spent some time last summer in Ontario doing

Since the Horticulture Department now possesses an apiary of its own, a movement towards the union of the Macdonald Apiary Club with the Horticultural Club is thought advisable this year, in the hope that by putting on addresses on both subjects more may be benefitted than were, by each club singly, in the past. We also

predict that horticultural products will go better with a honeyed flavor at our club's social evenings this winter.

Prof. Lochhead addresses the club at the next meeting on "Bees and their relation to Agriculture" The Professor knows "what is most worth while" in speech making, and his hearers are always rewarded.

The club is very fortunate in having for its President, Mr. Ben. Richardson, who has already had a very broad experience in practical horticulture. We may predict success to the club this session.

We are sorry to lose the help of Prof. Blair and Mr. E. M. Straight,

who have left the college, and who were strong supporters of the club last year. We trust that their lots are cast in pleasant places, worthy of them. To the new Horticultural staff we extend a hearty welcome, and feel that our intercourse will be both friendly to them and beneficial to the club.

We invite all those interested in horticulture and bees to become active members and assist in making the club this year what it ought to be among the students of an institution like our own Macdonald College.

H. J. M. F. '14.

If you are on the Gloomy Line,
Get a transfer.

If you're inclined to fret and pine,
Get a transfer.

Get off the track of Doubt and Gloom,
Get on the Sunshine Train, there's room,
Get a transfer.

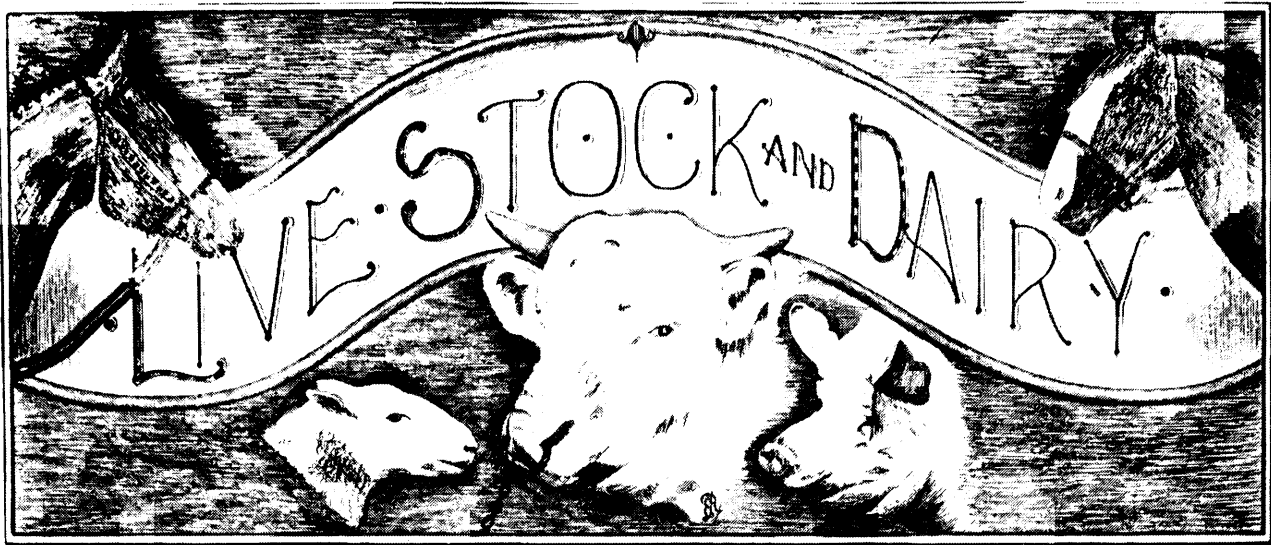
If you are on the Worry Train,
Get a transfer.

You must not stay there and complain,
Get a transfer.

The Cheerful Cars are passing through,
And there is lots of room for you,
Get a transfer.

If you are on the Grouchy Track,
Just take a happy Special back,
Get a transfer.

Jump on the train and pull the rope,
That lands you at the station, Hope,
Get a transfer.



Cattle Breeds and Breeding in the Old Country.

By H. BARTON, B.S.A., Professor of Animal Husbandry.



THE origin of breeding dates from the dawn of human history. In our early records of race we have records of breeds of horses and dogs, both classes being early esteemed and specialized to meet the requirements of man. Then followed the adaptation of cattle to man's needs, local conditions and requirements of the people being potent factors in directing improvement. Classic writers of Greek and Rome reveal a variety of improved breeds in the early centuries, but the great awakening and real movement in the shaping of our modern breeds began in the eighteenth century. The first man to conceive and institute principles in breeding live stock was an Englishman named Robert Bakewell. The pastures of England were the richest in the world, the tastes of the people for meat particularly, the most exacting in the world. Is it any great wonder then that history of modern live stock records the origin and development of more improved breeds in England than in any other country?

To-day no other country can exhibit as many breeds as are to be found in the British Isles. In no other country can one find so many high class specimens among a given number of almost any breed. Consider with this the small area of the country, and the fact that from here the herds and flocks of the world have been largely started, replenished and improved, and perhaps some conception of the little Island countries as a live stock centre may be formed.

However, it is not until one visits the actual field that a true appreciation can be had. The character of the pastures is apparent before the boat lands and the first live stock seen, perhaps the first living thing one may see is a herd of Shorthorns. Shorthorns are almost everywhere, the oldest most widely distributed and most magnificent breed in the old country. Fine a berth as the Shorthorn has made for himself, he by no means has exclusive possession. As already mentioned, the little countries are almost flooded with breeds, occupying their respective and in many

cases clear cut areas; in some instances meriting and enjoying popularity; in others, suffering the strain of competition.

If one were asked to name the important beef breeds that exist to-day, the list given would probably include Shorthorns, Hereford, Aberdeen-Angus and Galloway. These supply the world's greatest markets with beef. They are all of British origin and all at their best in parts of England, Scotland and

popular and occasional exportations are made to other countries. Canada and the United States for instance, frequently resort to the original stock for show numbers, although the popular American type in certain particulars shows some modification of that in the old country.

With Dairy cattle the situation in England and Scotland is somewhat similar to ours in America. The demand for milk seems to be increasing,



A Scottish Scene.

Ireland. The beef Shorthorn enjoys the greatest demand, this year experiencing a lull in trade, but, if the record prices obtained at the recent sale of Mm. Duthie, Collynie, Scotland, where over \$10,000 was paid for a calf, be taken as any criterion, the roans and the reds are still a live issue.

Aberdeen-Angus, Herefords and Galloways seem to be just about holding their own. Home trade is good for the respective sections in which they are

the dairy industry developing, and the interest in dairy cattle for commercial purposes at home, and the pure bred trade abroad, is at high tide.

Figuring most conspicuously at the present time is the Dairy Shorthorn. The milk cow of England has always been a Shorthorn, but the trade in breeding animals during recent years has been with the beef class. Increased cost in production of beef has, within the last few years, driven many to seek a

class of cattle in which the finished bullock could escape the charge of maintaining the breeding herd. Many in England believe the dairy Shorthorn affords the solution. It has been demonstrated beyond doubt that the Shorthorn cow can be made a profitable dairy cow, and still retain the possibility of making a creditable beef carcass through either herself or her calf, and moreover that she can be bred with reasonable certainty. There is much enthusiasm among the breeders. Cattle of special breeding are eagerly bought at what to many would seem exorbitant prices. Witness the recent dispersion sale of the late George Taylor's herd at Cranford where one cow sold for 525 guineas (\$2,646) and 187 head averaged 82 guineas (\$413.28).

Closely related and much resembling the milking Shorthorn is the Lincoln Red. As in Shorthorns proper (Coates Herdbook registered), the Lincoln Reds are of two types, both beef and milk, and some phenomenal records have been made by the Lincoln Red milkers. They are few in number, however, being confined to Lincoln county for the most part, and while registered as a distinct breed, it seems difficult to see just why they should be anything different from a milking Shorthorn since they are exactly the same class of cattle, originally of the same blood, although a distinct strain, and even now bulls which are Shorthorns proper, may be used on Lincoln herds and their progeny registered as Lincoln Red.

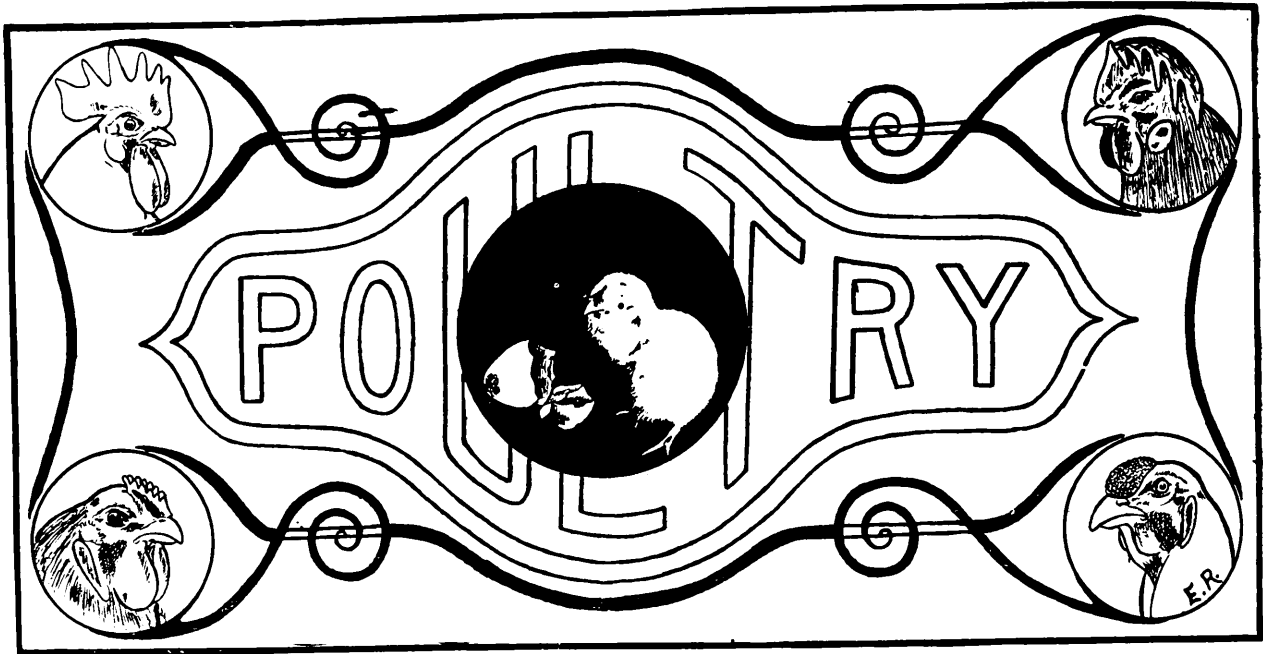
In the south of England two other breeds in the Devon and Sussex seem well adapted and highly profitable in furnishing meat and milk.

Among other dairy breeds, Jerseys have always been counted the aristocrats. Very fine herds are to be found on some of the large estates and frequent shipments are made to Canada and other countries. Ayrshires are not numerous in England. Here and there, particularly in the North where perchance a Scotchman has appropriated some English territory, Ayrshires and Shorthorn-Ayrshire crosses may be seen doing splendid service.

In Scotland the Ayrshire is king. Foreign trade is brisk and has been so for some time, United States, Canada, Russia and Japan being keen competitors for the best. Prices are high and with some breeders it would appear too tempting, canny as the Scot may be, for on more than one farm selling of the best breeding individuals has been overdone to such extent that very crippled equipment in both young and old stock remains to maintain the rank of the herd.

Holsteins are in the minority. One or two herds have been kept in the South of England for some time, and at present strenuous efforts are being made by the breed's few friends to extend the domain of the British Holstein.

A discussion of cattle breeds in the British Isles would be incomplete if mention were not made of the two breeds in which are to be found the smallest cattle, the Kerry of Ireland and the Welsh cattle in Wales. Both breeds are specially adapted and suitable for the conditions in which they are found, and the uniformity in type, size and color speaks something for those who have made the breeds.



Breeding for Increased Egg Production.

By M. A. JULL, B.S.A., Manager Poultry Department.



THE question of egg production is of paramount importance in poultry keeping and the work of breeding for increased production is as fascinating as it is difficult. Comparatively little is at present known with regard to the biological factors which cause improved egg production, or as to the laws according to which these factors operate, and the results of certain experimental studies in performance would appear to indicate that the common assumption that a performance record is the best criterion of the breeding value of the individual is not well founded on fact. From experiments conducted at the Maine Experiment Station it would seem that the performance record is in itself rather a poor indication of the breeding value of the individual. The results of breeding work at Maine are corroborated by the work of the Ontario Agricultural College, and the interpretation of these results are included in the following comments:

VARIATION IN ANNUAL EGG PRODUCTION

The statistics are examined by the methods of biometrical analysis. Omitting the mathematical conclusions reached, it may be said that there was no marked change in the average annual egg production. The following table shows the changes in average annual production between 1899 and 1907 in the case of Barred Plymouth Rocks, correction being applied to the figures in the years stated above to have been abnormal by adding allowances to the actual figures so as to give the highest probable yield in these years.

Years.	Birds Completing the Year	Eggs Laid	Actual Average Production	Corrected Average Production
1899-1900..	70	9,545	136.36	136.36
1900-1901..	85	12,192	143.44	143.44
1901-1902..	48	7,468	155.58	155.58
1902-1903..	147	19,906	135.42	159.15
1903-1904..	254	29,947	117.90	129.14
1904-1905..	283	37,943	134.07	134.07
1905-1906..	178	24,827	140.14	154.09
1906-1907..	187	21,175	113.24	142.07

The percentage of the extremely high layers (producing more than 195 eggs in the first year of production) in the flock decreased during the period from 1899 to 1907. The percentage of exceptionally poor layers (producing less than 45 eggs in the first year of production) in the flock increased during the period. The general characteristics of variation in annual egg production in White Wyandottes were found to be essentially similar in the years during which they were tested to those of variation in Barred Plymouth Rocks.

VARIATION IN MONTHLY EGG PRODUCTION.

The question of the variation in egg production at different times of the year is extremely important, both from a practical as well as a theoretical point of view. The differences in the production of eggs at different seasons cause corresponding differences in the price of eggs, so that the value of a hen depends upon the time of production of eggs in addition to the total amount produced annually. A bird with a large egg production may bring in less money in a year than a bird laying very considerably fewer eggs, but producing them at a time when prices are high. The aim of the practical poultry keeper is, therefore, to increase as much as possible his winter egg production.

The table below shows the average egg production per hen per month at the Maine Experiment Station, both in absolute figures and as a percentage of the annual production.

It will be seen that of the total annual production of 128.86 eggs, 28.02 per cent. (or 36.12 eggs) were produced in the winter months from November 1st to March 1st. In this third of the year, therefore, only about two-sevenths of the total number of eggs were laid. Between November 1st and July 1st 73.29 per cent was produced, i. e., in the first two-thirds of the laying year

nearly three-fourths of the year's eggs were laid. From March 1st to June 1st, 35.60 per cent of the total number of eggs was produced; in this particular quarter of the year, therefore, a little more than a third of the eggs were laid.

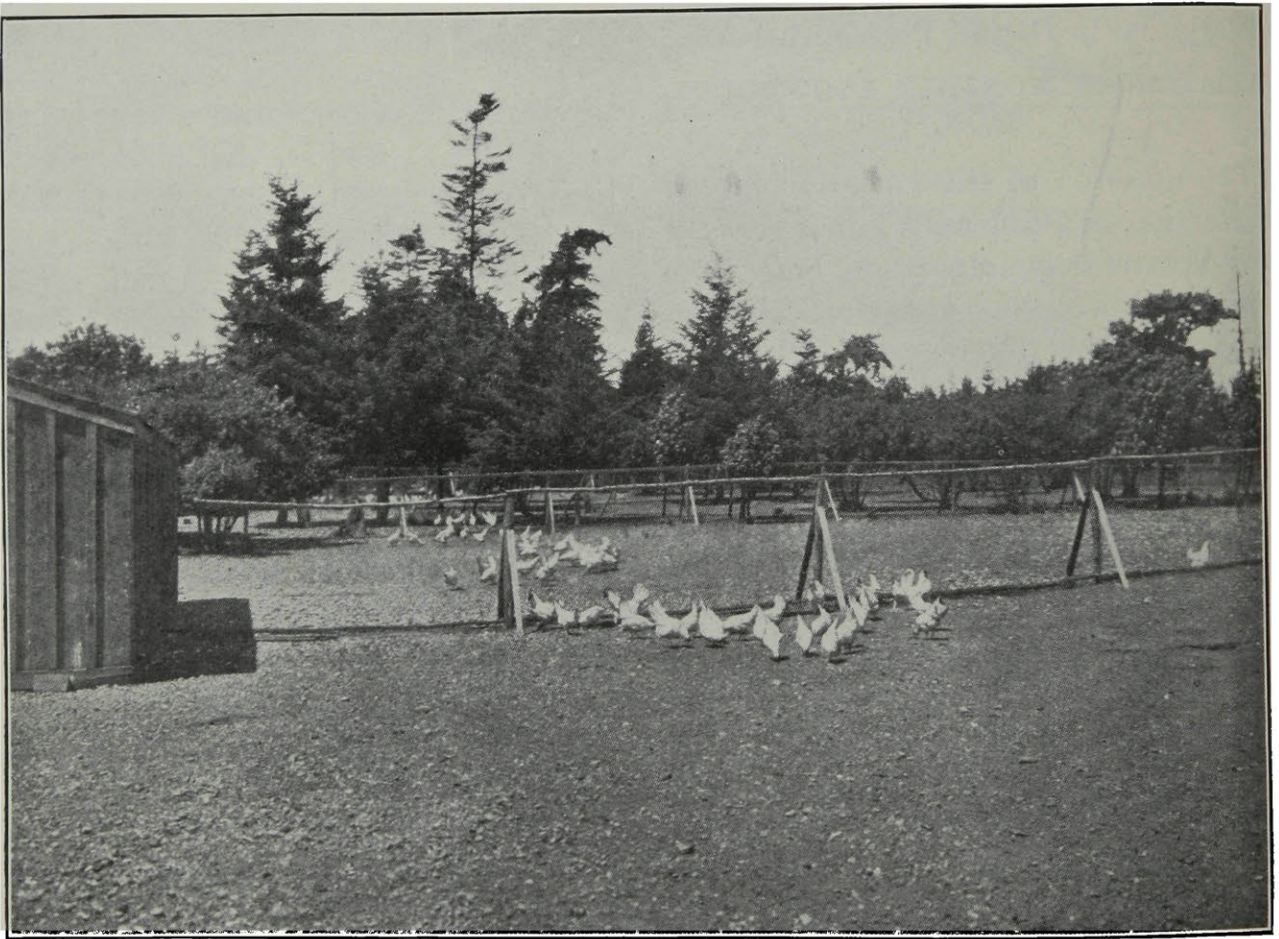
Month	Production per hen per month	Production from Nov. 1st to end of month	Percentage of annual production during month	Percentage of annual production between Nov. 1st and end of month
	No.	No.	per ct.	per ct.
November	4.63	4.63	3.59	3.59
December...	8.91	13.54	6.91	10.50
January	11.71	25.25	9.08	19.58
February.	10.87	36.12	8.44	28.02
March..	16.11	52.23	12.50	40.52
April.	15.85	68.08	12.30	52.82
May.	13.93	82.00	10.80	63.62
June.	12.46	94.46	9.67	73.29
July..	10.87	105.33	8.44	81.73
August.	9.84	115.17	7.64	89.37
September.	8.19	123.36	6.36	95.73
October..	5.50	128.86	4.27	100.00
Total	128.86	—	100.00	—

The average monthly production is lowest in November, and increases in December and January at a relatively very rapid rate. There is a slackening in the rate of increase in February probably due to the end of the winter cycle of egg production being reached. This February slackening amounts in many cases to an actual decrease in productiveness compared with January. The average monthly production reaches its maximum in March, this production being maintained throughout April, but there is a steady decline after April to the end of the laying year in October. There is a tendency towards a slightly larger decrease in May, this month being the period of natural broodiness.

The laying year may be divided into four natural periods or cycles. The

first (November 1st to March 1st) is the winter period in which egg production is essentially a forced process. The second (March 1st to June 1st) is the natural laying period of the domestic fowl in its normal reproduction cycle. The third (June 1st to September 1st) and fourth (September 1st to October 31st) are periods not sharply separated from one another. The summer egg production represents in part a natural continuance of the normal breeding

greater than it was fifty or a hundred years ago, but the increased production is quite possibly due entirely to the improved methods of management, which, had they been in vogue in earlier times, would have resulted in just as large a production as at present. The six best birds at the Maine Experiment Station have given an average production of 240 eggs per bird, an amount which seems to have been equalled in some cases fifty years ago.



A Happy Crowd.

season and in part a stimulated process. This period is terminated by the moult, which is the characteristic feature of the fourth period.

EFFECT OF SELECTION ON PRODUCTION.

It is by no means certain that there has, in recent times, been any marked amelioration in the innate qualities on which high egg production depends. The egg production of a given number of hens is, of course, on the average

Throughout these experiments there was an increase in the stringency of selection due to the fact that there was a decrease in the number of birds producing over 160 eggs; consequently, the variation exhibited in the selected stock became steadily smaller both absolutely and in proportion to the whole flock. It was not possible to find the effect of selection on egg production by tracing the production of parent and offspring, or by ascertaining the degree of inherit-

ance of the character and comparing the variability in successive generations following selection, as no records were kept at the Station by which it could be told what birds were the parents of any particular offspring. It was simply known that the eggs of high-producing hens were incubated, and the conclusions have to be deduced from data based on results obtained from the flock as a whole. These data show that the annual egg production has by no means tended to increase during eight years; the proportion of exceptionally high producers decreased, and the proportion of extremely poor producers increased. There is no evidence that the quality of high egg productiveness was any more fixed in the breed at the end of the experiments than it was at the beginning. During the last three years of the experiments it was shown that a relatively small environmental change is able to produce a very large difference in the average egg production in flocks of hens of exactly the same selected ancestry. Such a result could not occur if the character had been fixed by selective breeding.

With regard to monthly production, it was found that selection in this way for increased annual production had no beneficial effect on winter egg production, and it was even found in the experiments that the variability in monthly egg production was adversely affected. It is stated that there is no doubt that this system of selection failed to attain its desired end, i. e., increased egg production.

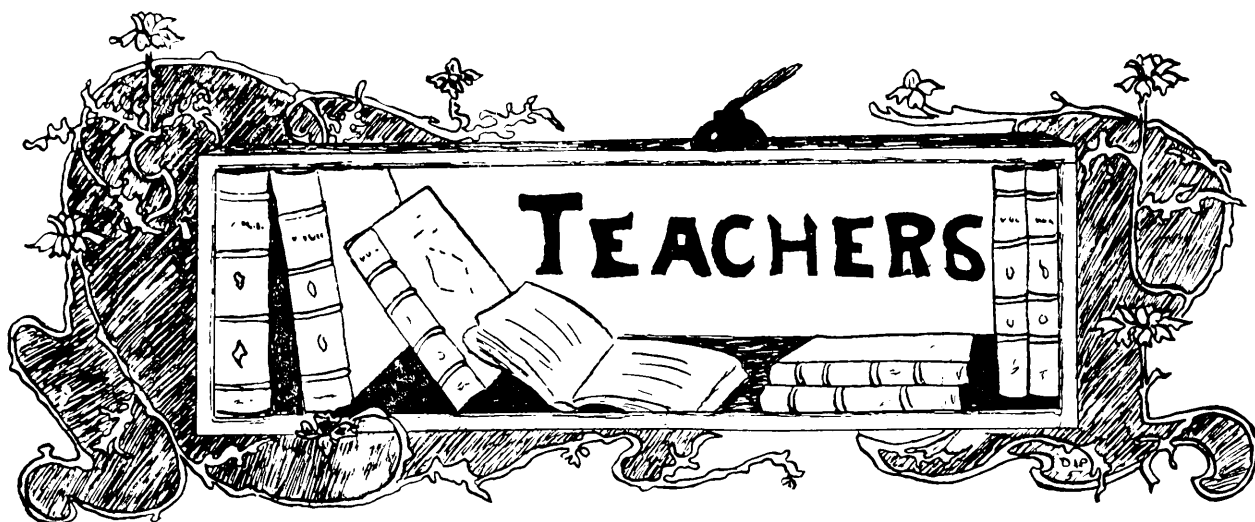
INHERITANCE IN BLOOD LINES.

The subject under discussion is summed up briefly by Dr. Raymond Pearl who conducted the experiment at the Maine Station.

"A careful study of hundreds of individual pedigrees concerned with egg

production has suggested the following view as to the result of crossing different genotypes in breeding for performance as worthy of further experimental test. There appears to be evidence that in breeding with reference to egg production, when an individual belonging to a line with a higher genotype is mated with an individual belonging to a line with a lower genotype, the offspring will, on the average, tend to approximate to the higher condition. Or, in other words, the higher genotypic condition with regard to a performance character tends to be dominant in the Mendelian sense over the lower.

If this suggestion is true, it gives at once, I think, a possible clue to the explanation of a part at least of the known facts regarding what is called prepotency in the practical breeding of domestic animals for performance. It is customary in practice to regard an animal as prepotent in breeding for performance when the progeny of that individual uniformly tend to resemble it closely in respect to the character bred for, regardless of the other parent in each mating. Let it now only be considered that the great sire, say, of speed or of milk production belongs to a line having a high genotype with regard to those characters; then it is to be expected, on the hypothesis under consideration, that his progeny will tend on the average to be like himself in performance regardless of what he is mated with, because any female to which he is mated will be either of a high genotype like himself or of a lower one. But if genotypic high performance is dominant over genotypic lower performance, then all the offspring in the first generation must approximate to the high condition exemplified in the sire. But this is the very essence of what is called prepotency in actual breeding practice."



Student Self-Government—A Side Light on the Problem.

By MISS L. B. ROBINS, B A.

TURN back the wheel of time. Stop it at the moment when first you realized that you had definite work to do in the world. It was then you felt the need of opportunity, suitable environment, and social conditions under which you could do most effective work. Then, in the interests of your work, you desired a good school, a teacher strict and strong, who could enforce wise regulations, and, in order to further your work, you were prepared to help in securing good government. The social purpose for which students gather together is work, and any activities which militate against effective work, both for the individual and the student body, are harmful. Emerson in his "Fortune of the Republic" says: "We want a state of things in which crime will not pay, a state of things which allows every man the largest liberty compatible with the liberty of every other man."

In furtherance of your life-work you came, in course of time, to Macdonald College, and, in the social spirit, are taking active part in the government of the student body, are working to secure such opportunities and social conditions as will enable each student to use most effectively the splendid materials for work to be found here.

What forces are you bringing to bear upon the solution of this problem? The basis of student self-government is control of the individual by himself. Goethe says: "I will be lord over myself. No one who fails to master himself is worthy to rule." The greater the social freedom of all, the tighter must be the rein of restraint of the individual.

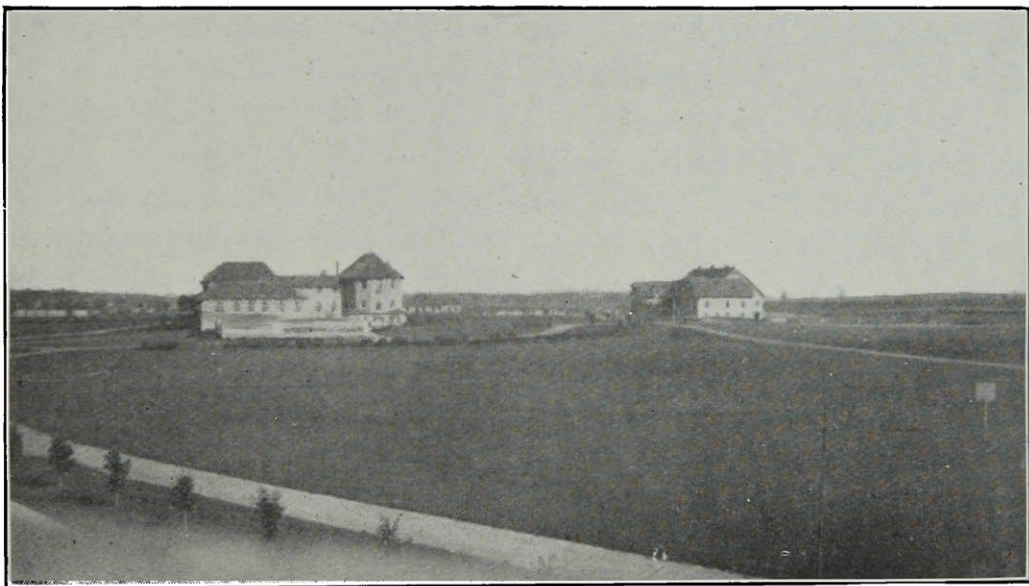
Who are ready for self-government? In general, those students who have high standards of living consciously defined, can generalize sufficiently to apply standards or principles or laws to specific cases of conduct, and have the will to turn thought into action in determining conduct. This implies edu-

cation of the head, the heart and the will. In the individual composing the student body we find previous training along these lines in very varying degrees of perfection. The forces that have been at work on the individual students are the home, the school, the church, the street, society. Government of self cannot be fallen upon suddenly. There is a long history of heredity, environment and training back of it.

Standards of living are formed by knowledge and practice in the application of the inexorable laws of life, founded upon reason, conventions of the social

others absolutely irrational. It is a convenience in a crowded railway train to have the one-ticket occupant of four seats compress himself and his belongings into less space, but it can hardly be called as yet a clearly defined Canadian convention for him so to do.

Laws, conventions and conveniences are widely different in value in determining conduct. The laws are strong musts. "Liberty is the result of law, not, as many suppose, the absence of law," says Alden. The observance of laws, conventions and conveniences is at the root of true liberty.



Girls' Campus.

world more or less reasonable, and what, for lack of a better term, may be called the conveniences of society. "Thou shalt not steal" is one of the inexorable laws of the moral and civil codes summed up so admirably in the ten commandments. It would be a bad thing for the world if the wholesome fear of law were withdrawn from the human heart. It is a convention of the social world to eat soup from the side of the spoon and to push the spoon from one in lifting it up. This convention is governed by sound reason or common sense, but there are many

The school helps in preparing students for self-government in proportion as it reflects the best life of the state. The school work which bears directly on the training for citizenship is the grouping of pupils for team work, co-operative work in manual training, arithmetic, geography, etc., the study of civics, not as an isolated branch, but in connection with history, geography, laws of health, etc., and the introduction of the game element into work, with fair play as the basis. Over-supervision on the playground is taking from pupils that best of all practice in self-government—

undirected play. On the playground both leaders and subordinates are trained. The individual becomes capable socially by learning to work and play in harmony with others.

Each department of work has its own conventions. School conventions, such as prompt obedience to directions for work, punctuality, strict attention to the requirements of the time-table, silence during certain exercises, respectful demeanor towards those who represent authority, should rest upon sound principles. In all applications of restraint appeal should be made to the reason or common sense of pupils for "Reason is the life of law. Nay, the common law is nothing else but reason. The law is the perfection of reason." The formulation of many rules is to be deprecated for no one has sufficient foresight to provide for all possible good conventions, and, also, conventions which are merely senseless restrictions should have no place as a basis for government. Students who will not listen to reason, and there are a few of these in every school, must be disciplined. All of us from the cradle to the grave are under government. This is a fact of society. Happy are we if this government be founded on truth and justice. We can ask no greater good. Under a strong government the best students get the greatest opportunities. Their work is recognized, their efforts to raise the standards are appreciated, and worth counts. Intellectual growth is more rapid under strong government. Slipshod discipline leads to slipshod ways of thinking, and in an ill-governed institution mental acumen is below par.

The function of the school is to train the youth of the country for social efficiency, not to send out into the world the wreckage of self-government schemes, novel and entertaining as these

may appear to the participants, a menace to the social life of the country. The foundation of self-government in the future is a strong, firm government during minority, imposed by those who have acquired skill in governing by long practice in the art, and who know the moral code and the valuable social conventions.

Some of the causes militating against effective self-government on the part of students are:

1st. The short terms of residence of many students, and their divergent aims and varying ages and attainments. The longer a student is connected with an institution the more keenly he feels his responsibility to it.

2nd. The presence of so many minors, that is the presence of many students under legal self-governing age.

3rd. Lack of permanence in the student body. Where there is but a small core of the student body passed on from year to year there is a resultant waste in tradition, in accumulated wisdom, in wise enactments, in adjustment to environment, and want of skill and determination in dealing with refractory students, and great danger of unwise choice of leaders where all are new. The same blunders are made from year to year, and too little gain in governing skill is made.

4th. Want of co-ordination and co-operation in the various governing bodies, and failure to see clearly the dividing line between the functions of the Principal, the officers of instruction, the other members of the staff, and the student body.

5th. The presence of an overwhelming majority of women who, as a class, have not had in the past cause seriously to consider self-government.

6th. Lack of knowledge of the social conventions that make for good living. Some of these are materially different

for men and women, and it is, if this fact merely be taken into consideration, impossible to concede that men students are trustworthy guides for women students in regard to social conventions. A daughter is a very precious possession, and at the important formative period at which she enters college, it is most desirable that she should be safeguarded in every way by being placed in the care of a lady of power, of breeding, of culture, of education, of tact, who shall stand to her as friend, as example, as guide, as counsellor, as monitor, as master, if need be, to save her from taking some foolish or wrong step, a lady who shall make and preserve in the women's residence a social atmosphere reflecting the social life of the best homes.

7th. The large number of people in residence in small space makes the life more stilted and the restrictions greater than in a well-ordered home

8th. The serious loss of time spent in disciplining a few irresponsible students, at a time when the student disciplinarian ought to be making headway in her own work.

9th. Failure to recognize that the regulations made by the students themselves are binding on all.

A few of the helpful factors in student self-government are:

1st. Loyal support of the Principal

and other officers responsible under him for the welfare of the College, and the upholding of a strong form of government.

2nd. Co-operation in securing opportunities for all, for the doing of good work.

3rd. A careful study of the whole question of government from a broad standpoint, and of the laws and conventions which make it necessary.

4th. Truth and justice in dealing with students, which bring a reaction of "sweet reasonableness" in the majority.

5th. Willingness to ask advice of those competent to give it, when in doubt.

6th. The saving grace of humour.

In conclusion, the word government is a picturesque one. The Latin word *gubernare* meant to steer or manage a ship. Who shall take the ship into port? Assuredly the people who know whither it is bound. Neither the passengers nor the deck hands are called upon to do this. The captain and his officers are responsible for the ship, and these cannot relegate their responsibility to others. However much each officer and each passenger on board may contribute of time, of talent, of loyalty to the success of the voyage, the total contribution will be inadequate to the task undertaken.

School Gardens.

By D. W. HAMILTON, B.A., Ph.D.



I DROPPED a seed into the earth. It grew, and the plant was mine. It was a wonderful thing this plant of mine. I did not know its name, and the plant did not bloom. All I know is that I planted something, apparently as lifeless as a grain of sand, and there came forth a green and living thing, unlike the seed, unlike the soil, in which it stood, unlike the air into which it grew. No one could tell me

lesson is—*that it is worth while to have a plant.*—BAILEY.

Long before *public* schools had an existence, the value of the School Garden was recognized in Europe, and we are told that by the middle of the 16th century almost all of the Italian universities and many Italian cities possessed gardens. Over 250 years ago Cornenius said: "A garden should be connected with every school where children can at times gaze upon trees,



A Good Yield.

why it grew, nor how, It had secrets all its own, secrets that baffle the wisest men; yet this plant was my friend, it faded when I withheld the light, it wilted when I neglected to give it water, it flourished when I supplied its simple needs. One week I went away on a vacation, and when I returned the plant was dead; and I missed it.

Although my little plant had died so soon, it had taught me a lesson; and the

flowers, and herbs, and be taught to enjoy them." As if in response to this prophetic declaration his native country, two hundred years later, was the first to require by law the establishment of school gardens in connection with elementary schools. The Austrian Imperial School Law of 1869 prescribes that "when practicable, a garden and a place for agricultural experiments shall be established with every rural school." To-day Austro-Hungary has

over 20,000 school gardens. In one province every school has a garden.

In Sweden, in 1860, a royal proclamation required school gardens of different sizes to be appropriately laid out for the children of elementary schools. In 1876, Sweden had 1600 such gardens and now the number is over 5,000. It is quite worthy of note that, while the Swedish system of manual training and gymnastics has been deemed so worthy of study by Canadians, the school gardens, perhaps of greater importance, have escaped their notice almost entirely.

In Belgium the school law of 1873 provides that every school shall have a garden of at least $\frac{1}{4}$ acre, and a Royal Decree of 1897 requires that all teachers shall be able to give theoretical and practical instruction in horticulture and agriculture.

In Switzerland this has been a live question for many years. The establishment of school gardens has been encouraged through prizes and other financial aid, and ample provision has been made for suitable instruction in the normal schools. The effect on the home surroundings has been marked. This is generally true wherever gardens have been established for any length of time.

In France, in 1882, the teaching of elementary agriculture in the public schools was made compulsory. France now has over 30,000 school gardens, and no school can receive government aid without such equipment. France has over 100 agricultural institutions, among the finest in the world, for the giving of more advanced courses in agriculture.

Even Russia with all her inherent barbarism is making great headway in school gardening. It is reported that a few years ago in a single province 257 out of 504 schools had gardens aggregating

300 acres. These gardens contained among other things, 110,000 fruit trees, 240,000 forest trees, and more than 1000 beehives.

Germany has thousands of gardens which are carefully and artistically planned. On Sundays the gardens are open all day as a park, and parents have shown great appreciation of this element of school training.

In England during the past two or three years there has been a rapid increase in the number of school gardens and now England has thousands. In every English county gardening is taught.

In 1891 the first school garden in the United States was started, and now gardening is a popular and successfully taught subject in connection with both city and country schools. In Cleveland, Ohio, 75,000 children have gardens either at home or at school. In one county in Illinois there are 100 gardens. In 1905 New York City appropriated \$5,000 for maintaining children's gardens in Clinton Park. In the same year Philadelphia set aside \$3,500 for the same purpose. Probably the largest school garden in the world is in Philadelphia. The garden covers 4 acres of land, and over 1000 children have plots, each 12 x 15 ft.

School gardens are now conducted in the West Indies, Philippine Islands, Hawaiian Islands, and in many other remote countries of the world.

In Canada in 1904, the Macdonald school gardens were established in all the Eastern Provinces of Canada. Even before 1904 there were 52 gardens in Nova Scotia where for several years Dr. A. H. McKay, Chief Supt. of Education, has ably advocated Nature Study and School Garden work in connection with schools.

"The great majority of European school gardens look to utility. The

Macdonald school gardens of Canada, while designed to encourage the cultivation of the soil as an ideal life-work, were intended to promote above all things else symmetrical education of the individual. They did not aim at education to the exclusion of utility, but to seek education through utility, and utility through education. The garden is the means—the pupil is the end." Now, gardens have a recognized place in our Provincial Systems of education, and the work of the garden is recognized as a legitimate part of the school program. The garden is becoming the outer class-room of the school, and the plots are its black-boards.

The garden is not an innovation, nor an excrescence, nor an addendum, nor a diversion, it is a happy field of expression, an organic part of the school, in which the boys and girls work among growing things, and grow themselves

in body and mind and spiritual outlook.

In the words of Walt Whitman: "There was a child went forth every day, and the first object he looked upon that object he became, and that object became part of him for the day or a certain part of the day, or for many years, or for stretching cycles of years."

In the little book, "Elizabeth and her German Garden," we read: "If Eve had had a spade in Paradise and had known what to do with it, we should not have had all that sad business of the apple."

"Spacious and fair is the world; yet, oh!
how I thank the kind heavens
That I a garden possess, small though
it be yet my own.

One which enticeth me homewards—
why should a gardener wander?

Honor and pleasure he finds, when to
his garden he looks."

GOETHE.



A School Garden.

Day School Notes.

The prospects for a good hockey team this year are especially bright. The subject has been discussed at great length, at fit and unfit times, and with and without approval.

* * *

Mr. Craik, of last year's Model Class in the School for Teachers, has joined the Day School staff. His work is for the most part in the middle and upper divisions of the school. He has made himself a general favorite, both with teachers and pupils.

* * *

We had a couple of very exciting ball games between the boys of the Academy class and the boys of the Model classes recently. After the first, in which the seniors received a hearty trimming, they challenged for a second game. The score was quite as satis-

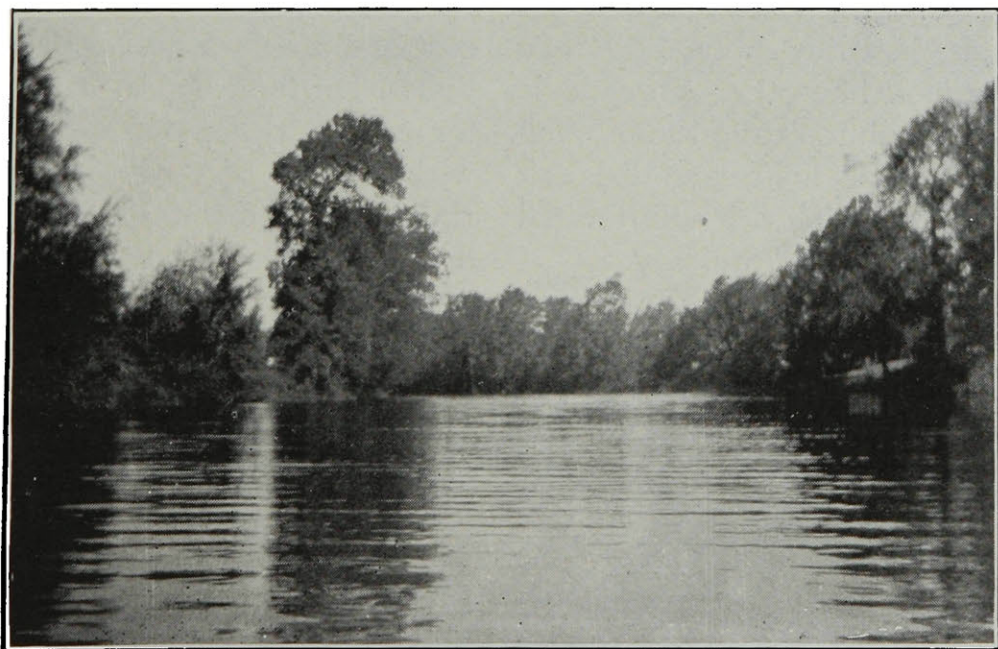
factory to the Model boys as that of the first.

* * *

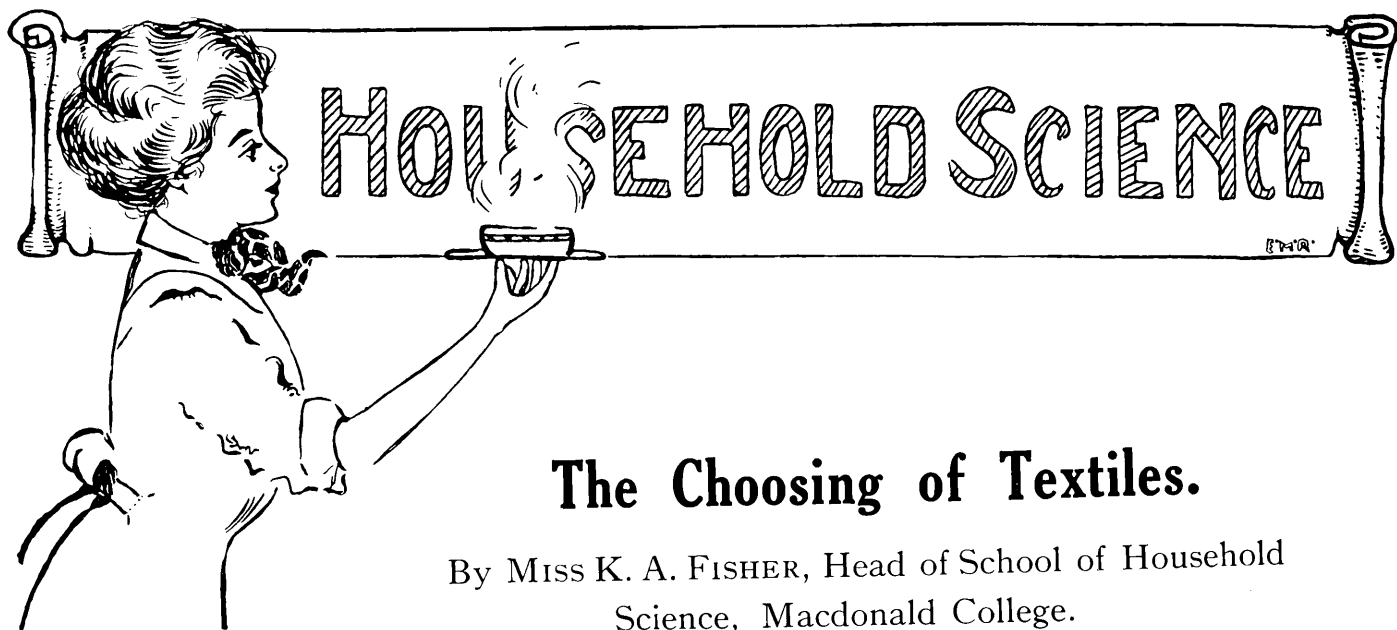
The annual Sports' Day of the Day School was held on the afternoon of October 31st. Though so late in the season the day was fine, and the weather quite suitable for games. The open one hundred yard dash, the relay race, and the bicycle race were perhaps the most interesting numbers of a very enjoyable day.

* * *

A Literary Society has been formed in the Day School. Under the Presidency of Philip Kennedy good meetings have been held weekly on Friday afternoons since the first of October. One particularly interesting feature of the program is the reading of "The Academy Occasional News." The editor of "The News" is Violet Watt, Academy II.



Down the River.



The Choosing of Textiles.

By MISS K. A. FISHER, Head of School of Household Science, Macdonald College.



WE have on the market a very large variety of cotton fabrics. It is only when cotton does not pretend to be anything else that it is our most useful and durable textile. For sheets, pillow cases, and for summer garments it is indispensable. It is cool and easily laundered if in white goods, but owing to difficulties in dyeing coloured cottons fade easily. It does not take a natural lustre, and as in modern manufacturing methods it may be made to look like other fibres it is largely used in adulterating these. And just because it lacks lustre and does not take dyes readily, fabrics adulterated with it wear "shabby" quickly.

In order that cotton threads may stand the wearing a process called "sizing" is used. Unfortunately the size is not always used judiciously, and much cotton dressed in this way gives the appearance of weight and strength where these qualities do not exist. As starch, glue, and other similar materials are used for this purpose, and applied as a hot paste to fill up spaces between the fibres, the first washing removes the

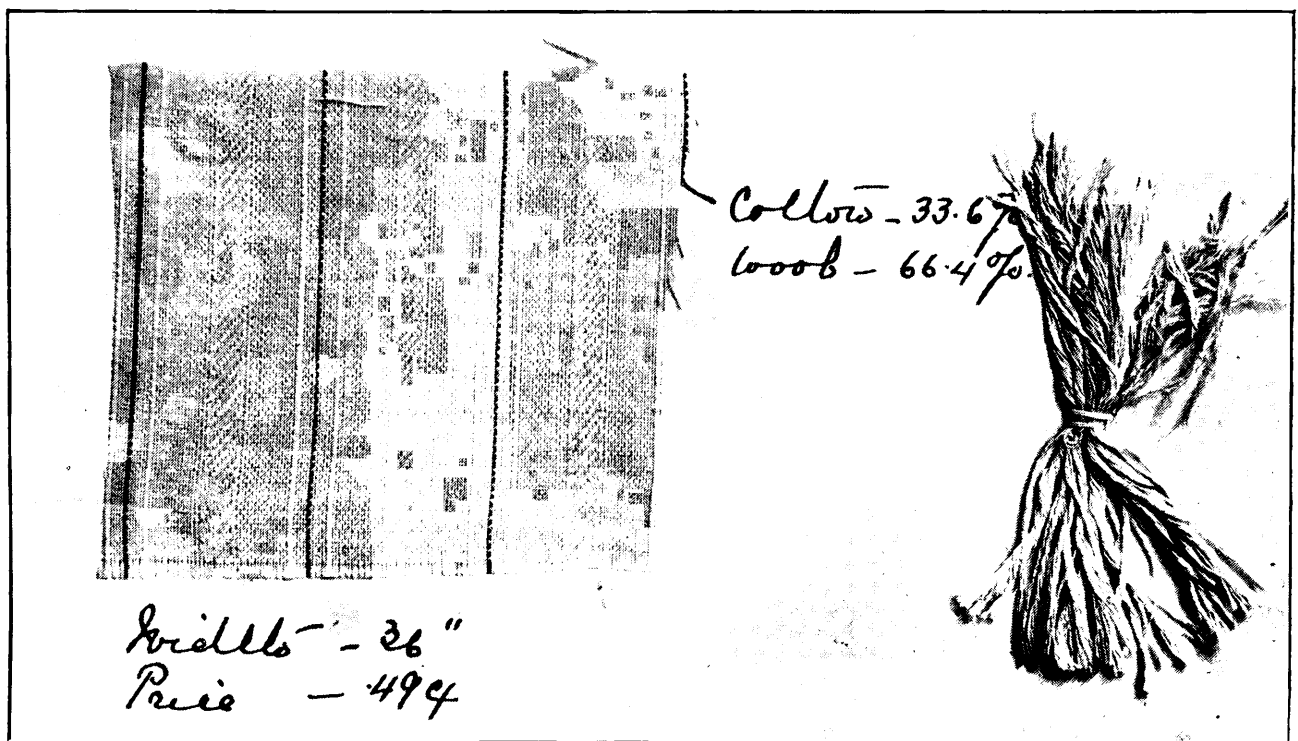
size, leaving the garment "like a rag." Should you see a friend proudly exhibiting a piece of glossy white cambric "bought at a sale for eight cents," you may be sure that on tearing it a cloud of white dust will rise, and washing will reveal its true quality, for the sizing formed the glossy coating.

In buying coloured cottons these questions should be considered and answered by testing: Do they fade? Do they shrink badly? Are they glossy at first and after washing coarse, open and dull? Do the colours "run?" To test for fading, cover one end of a sample with a piece of cardboard. Expose to the sun for a few days. Permanence of dye is also tested by the action of soap and water, and the water must be of the usual washing temperature. The colors may "run" when treated with the soapy water several times. Light blue, red, lavender, and green in cheaper grades are the least satisfactory colors. Testing for shrinkage is of course simple. Measure two samples an equal size, and repeat previous test in soapy water with one, leaving it immersed over night. Dry in moderate temperature without

stretching. Compare with unwashed sample. The amount of sizing can also be detected in this way.

Next to cotton, flax is the most important vegetable spinning material. Its smoothness, its lustre which improves with laundering, and its exquisite freshness all make it an ideal fabric for table cloths, table napkins, towels, etc. Good linen should be soft and elastic, with somewhat of a "leathery" feeling. In earlier days linen of course was bleached on the grass by sun and rain, but it is

and the shop is reliable, it is difficult to detect Union cloth. The buyer of linens will tell you that he can "feel" the cotton in a material, but he cannot explain this feel. Indeed, nowadays cotton cloths are manufactured with a finish so nearly resembling linen that the average shopper is often deceived. The best linen requires little or no dressing, and one with a great deal of this should be carefully considered before buying it. Dressing also covers the detrimental effects of artificial bleaching.



Woollen Material Showing per cent. Cotton Extracted. (Cotton fibres on the right.)

now usually done by chemical processes. Sometimes artificial bleaching is used in the earlier stages of the process, and the grass bleaching follows. It is claimed the celebrated Irish linens owe their good colour to this latter method. Unless great care and time are taken in artificial bleaching the fibres are weakened, causing the material to wear out quickly in various places throughout the piece. This is often noticed in poor table damask.

Unless the law demands that the presence of cotton in linen material be noted

It is quite as difficult to determine the different qualities of linen. The brand names aid to a certain extent, but "grass bleached" linen is not always to be depended upon as such. These, if genuine, are softer from the beginning, and of course will wear much longer. Linen mixed with cotton wears 'fuzzy' as the cotton washes out in the shape of lint. Laundering, of course brings out the true quality. Use of the microscope and chemical tests are probably the only accurate and sure ways of detecting cotton. In general, linen

weaves are more difficult to tear than cotton. The torn ends of linen appear free from curl and unequal in length and are glossy, while cotton edges show dull curling threads of equal length. In examining them against the light, cotton fibres have great uniformity, while flax appears streaked and uneven. Burned ends of a bundle of linen threads appear in an even compact manner, while those of cotton spread apart.

Each year sees additional standards of quality for certain food products prepared and legalized. This in a large measure prevents the placing of adulterated goods on the market. Very little, if anything, has been done in establishing standards for textiles. Large purchasers of fabrics and various adminis-

trative bodies—as army departments—have adopted specifications and tests to ensure certain standards in their textiles, but the individual consumer has no such protection. It seems consistent that the manufacturers should be made to put an honest label on their goods, and thus give us protective standards. The manufacturers state in their own defence that the public demand cheap clothing and are indifferent as to its durability and general wearing efficiency. We should not expect to buy good silk, pure wool or linen below certain prices, but we should expect goods to be correctly labelled as to quality so that we may have some definite basis for judgment in purchasing cloth.

Millinery Past and Present.



IN every age and country there has been a recognizable costume of general style of headdress, which fluctuates according to taste and whim. Only in China and some other eastern countries, that in consequence of dress being regulated by sumptuary laws or some equally strict traditions, the fashions remain from generation to generation with little or no change.

Women of all ages have been animated by a desire to adorn themselves in an attractive manner. In fact, every imaginable type of ornament, every manner of fabric, has been employed from time immemorial for this purpose.

In reviewing the history of millinery

we find that the styles of to-day are merely styles of some centuries ago, these of course, with modifications and various combinations to suit the seasons; and we may truthfully say that there is nothing in millinery absolutely new, but these combinations and the ever acceptable modifications.

To Isabelle of Bavaria are we indebted to the high hat, which, of course, in a modified form had such sway only last winter. This hat was not very high when first brought out, but ladies of rank sought to outdo one another in size of their hats, eventually increasing the height to three feet.

Again, our turban is an ancient type of headdress and prevails wherever the Mohammedan influence is supreme:

even now, this style is worn in Sicily, Italy and all countries bordering on the Mediterranean.

The Mob Cap, that most popular of all present day styles, was introduced in the middle of the eighteenth century and is described as a cap with "floppy frills and ruffles."

During the period of magnificence in the Empire of the East, the wealth and fashion of the world centered in Byzantium; the headdresses worn were fabulously expensive, studded with jewels to the uttermost limit of the possibilities of adornment. From this period has been handed down the fondness for

considered; young and old, whether it was becoming or not, appeared in this large flat hat with its low crown, quite covered with flowers, huge bows of ribbons or most attractive lace creations.

Designers have studied the fashions of periods long past and taken a bit from one century, adding an especially pleasing effect to another, giving as they have this year a season of great scope and liberty. Nor did they choose in a haphazard sort of way, but rather have given us designs which furnish the motive of new practical up-to-date development.

We have the large flat hat; the one



Costumes—Ancient and Modern.

crescents, anchors, buckles, flower-forms and ornaments and their jewelled effects in modern millinery.

As for extremes in width of brims, those worn by Nell Gwynne exceeded all others—her hats actually measured four feet across, had straight brims with small crowns and were profusely decorated with large, beautiful ostrich plumes.

The most pronounced, at the same time most popular style in recent millinery history was the "Merry Widow Sailor"; this style was worn by any and all, regardless of class. Even age was not

with the up-turned brim or turned up on one side and down on the other; the attractive little hat with the Tarn crown and the ever popular picture hat, as a few of the models.

As to a choice of hat. If put into actual practice the accepted truth that "style is knowledge," the individual should study lines, trimmings and best of all herself. Few appear to good advantage in an absolutely plain hat, the lines are too hard; while to the average woman the hat with a rolling brim is far more becoming; others can wear the mushroom or turned down

brim, although this style is usually considered as one suitable only to a young and pretty face.

Regarding the trimming of a hat, let each decide what kind is more becoming: velvet, feathers, flowers, light things such as tulle, laces and malines and so on. This season the range is wider than ever before: from one extreme to another—no trimming at all to a hat completely covered with feathers, flowers or whatever suits the fancy.

A most becoming hat can be completely spoiled by an inappropriate trimming. As far as possible, the lines of the hat should be carried out in the trimming. In other words the lines made by the trimming must harmonize with the lines of the shape and not wholly conceal or destroy them. When

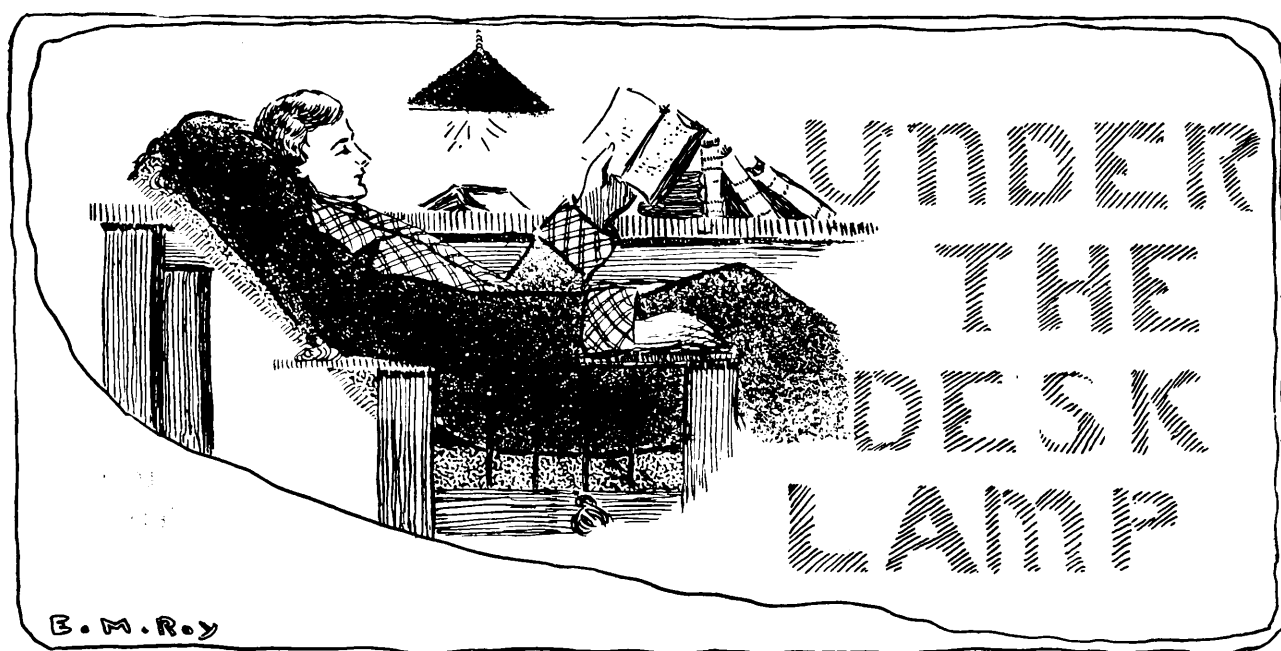
a hat has hard severe lines the trimming should tend to soften or break these lines. Keep in mind this fact: the best points in the face of the wearer of a hat are to be emphasized by its trimming, and the bad points concealed or softened.

If in dress, the hat indicates the character of the wearer, see that the true character is displayed. In this day and age when colours of most clashing character are combined, we cannot be too careful or too critical of our choice, knowing how susceptible we all are to the influence of dress. Choose a hat not because it is beautiful or will be "so serviceable," but rather because it is becoming. Let the hat complete the picture, not mar it.

A. M. Z.



Executive Committee, Macdonald College Literary Society.



THE COLLEGE AND THE UNIVERSITY.

STUDENTS who were at the College last year will remember that it was the intention of the McGill Song Book Committee to include six Macdonald songs in the McGill song book. Inquiries have repeatedly been made of us as to when the song book will appear. We have recently obtained information on the subject from Mr. Robert Newton, '12, Macdonald College representative on the song book committee. Mr. Newton writes us that on account of a series of delays, practically no work has been done on the book since the songs were collected. The committee, however, is now getting at work again and aims to have it ready by the spring.

* * *

The McGill Annual this year will devote several pages to the Juniors in Agriculture, publishing their individual photographs among those of the other junior students of the University. For some reason, last year a class picture was published instead of the individual pictures, and we are pleased to see that this matter is being rectified.

ATTENTION IN ASSEMBLIES.

"Dr. Harrison, would you ask Dr. L—— to address the first meeting of the Literary Society?" "I should be pleased to do so, but when last Dr. L—— addressed the students he wrote me that he was greatly discouraged by the obvious inattention and loud talking among the students." Which reply takes us back to last year when the lovers of music among the students suffered such keen disappointment on learning that Dr. Perrin had cancelled all his future organ recitals at the college. And this was due to the lack of appreciation shown by the students. Again, the Principal has informed us that he will probably make arrangements to have organ recitals in the Assembly Hall at various times throughout the session, and to have men prominent in scientific, educational, or political circles address us from time to time. Isolated as we are here at Macdonald, we keenly appreciate the benefits to be derived from such a series of lectures and musical entertainments. But these will only be continued if the behaviour of the students is better than it has been hitherto. We are sure,

however, that conditions can and will be bettered in the future, for the trouble is the result, not of any intrinsic faults, but of mere thoughtlessness. For if we paused to think we would see that when we act as some of us have acted in the assemblies we show not only a lack of courtesy to the speaker, or to the individual or society that engages the speaker, but also a lack of respect both for the good name of our Alma Mater and for ourselves.

It is true that our faculties lack development along certain lines. For some of us these lines are more numerous than for others. It is unfortunately true that some of us are unable to comprehend and consequently to appreciate addresses on certain subjects; it is most unfortunately true that some individuals are bored by music not of the popular style. But if we know that we are not interested in the subject of an address, and expect to derive no benefit from it; if we know that to us Beethoven's sonatas are nothing but a combination of noises from the pipes of the organ, then the obviously rational thing to do is to stay away. Instead of this, many of us attend these lectures and by our inattention and private conversation not only make it extremely unpleasant for the speaker or performer, but prevent others, more appreciative, of deriving any benefit from the assembly.

As we said before, we feel sure this is due merely to thoughtlessness and will be corrected now that the attention of the students has been drawn to it. Should it persist, however, we would suggest that the House Committee and Court of Honour take very drastic measures to secure attention on the part of all those who attend the assemblies throughout the session.

All those who were fortunate enough to enjoy the stirring debate between the

O. A. C. and Macdonald last year, will be pleased to learn that Macdonald will be sending a debating team to Guelph this year along with the athletic teams.

INTER-CLASS AND INTER-COLLEGIATE DEBATES.

The first of the series of inter-class debates will take place on the ninth of December and will, therefore, be a thing of the past when this number is published. The debaters are Messrs. Lothian and Lelacheur for the Seniors, and Messrs. Schafheitlin and Ritchie for the Juniors. The question is:—"Resolved that military conscription of men from 18 to 21 years of age and involving a training of one to three years consecutively would be in the best interests of Canada." The Juniors will take the affirmative.

EXCHANGES.

That co-education is not the failure that certain members of the Sophomore year tried to prove recently in their debate, but is, on the contrary, a live influence for good, may be seen by reading the articles in the November *Alumnus* entitled "Co-education at Ames," and "The Action of the Board of Education." The writers express very forcibly the indignation of the students at the proposed discontinuance of the courses in Domestic Science at the Iowa State College.

* * *

HINTS FOR THE FRESHIES.

Always put off till to-morrow what you can't do to-day.

Don't worry looking up a foreign word if you think you can guess its meaning, even though it usually means something totally different.

Don't be discouraged if you can't write down everything the Professor says. Remember, "Brevity is the soul of wit."

Don't give the Professors too great an impression of your intellectual abilities, or they will remember that in the Christmas exams.

If you happen to get a "pluck" at Christmas, don't look glum. The kind Professor only wishes you to remember that a "stitch in time," etc., saves further trouble in June.

Last, but not least, remember that College is not such a bad place after all, and that you can't get indigestible articles in your sausage every morning for breakfast. The family cat has grown wiser.—*The Mitre*.

BROKE, BROKE, BROKE.

(Apologies to Tennyson).

Broke, Broke, Broke,

I have spent all my money, O Sea!
And I would ' could cuss, to utter
The thoughts that arise in me.

O, well for the innocent babe,
That he for long green may not yearn!
O, well for the millionaire,
That for money he has no concern.

And bill after bill comes in,
Into thousands they seem to amount;
But O, for the touch of a ten dollar bill,
Or a cheque to square the account.

Broke, Broke, Broke,
I don't care who knows it, O Sea!
But the tender thought of the money
that's spent
Will ever come back to me.

—THEODORE J. KELLY, in *University of Ottawa Review*.

HONEST, IT'S EASY FOR US.

To run a college newspaper, all a fellow has to do is to be able to write poems, discuss the tariff and money question, umpire a baseball game, report a wedding, saw wood, describe a fire so that the readers will shed their wraps, make \$1 do the work of \$10, shine at a dance, measure calico, abuse liquor habit, test whisky, subscribe to charity, go without meals, wear diamonds, invent advertisements, sneer at snobbery, overlook scandal, appraise babies, delight pumpkin raisers, minister to the afflicted, heal the disgruntled, *fight to a finish*, set type, mold opinions, sweep office, speak at the prayer meetings and stand in with everybody and everything.

This isn't half of it, either. We have to side in with the faculty, agree with the students that the faculty members are a lot of dead ones; run jokes for some people and explain to others why we print such trash; keep enough religious news going to satisfy the Preachers and still not offend the Laws; explain to some indignant contributor why his poem wasn't on the front page and, in general, keep everybody in a good humor till they pay their subscription. In the meantime we all carry fifteen hours' work and sometimes study.—*Ex.*

* * *

Acknowledgments with thanks.—O. A. C. Review, Illinois Agriculturist, The Alumnus, The Mitre, The Argosy, The University Monthly, University of Ottawa Review.



CORRESPONDENCE

DEAR MR. EDITOR,

After leaving one's Alma Mater different problems present themselves for solution. I should like to have space for the presentation of one of these.

That the College course is abundant with reward for the farmer has now become an established fact. It is only after a man has gone "through the mill" and then back to cope with the difficulties of farm life that he fully realizes, from a course of this kind, all the benefits and, as well, some of the defects.

As it has recently been put, colleges are doing good in teaching the farmer how to grow two blades of grass where one grew before without putting sufficient emphasis on how to dispose of the second blade.

Co-operative fruit selling has been brought home to many farmers this fall, when they find that without it all work in the orchard has brought, at the end of the season, nothing but a deficit. Many instances have come to my notice where scientific methods, though they certainly gave better yields, did not give the farmer better profits. Notably a case in potatoes where thorough cultivation and spraying produced a big crop but a lack of

quantity to ship away and an absence of appreciation on the home market brought the grocer no increased returns.

Graduates in Agriculture as a result of their training should be able to grow better crops and stock and more of them. But the difficulty that at once presents itself is the profitable disposition of that produce.

As trained Agriculturists we are expected to know that end of the business and rightly so. Are we sufficiently trained along these lines? Personally, I feel a great lack of the necessary, the almost essential, training in Home and Foreign Markets and in Rural Economics.

A course in Political Economy was instituted a few years ago, after some agitation. While this is good should not the students have the opportunity of hearing up-to-date market-men and getting their views of the case and as well have a course of lectures dealing with the essential features of Rural Economics.

Thanking you for your valuable space,

I remain,

Faithfully yours,

GRADUATE.



MACDONALD COLLEGE LITERARY AND DEBATING SOCIETY.

A meeting of the old members of the Macdonald College Literary Society was held on October 21st, to reorganize the Society, and elect officers for the ensuing year, besides arranging a programme for the remainder of the fall term.

The officers elected are as follows:—Honorary Pres'dent, Dr. Sinclair; Honorary Vice-Presidents, Miss Fisher, Dr. MacFarlane; President, A. C. Gorham; Vice President, Miss Brown; Secretary-Treasurer, T. F. Ritchie.

The Presidents of all the Class Literary Societies are also members of the executive committee.

With such an able committee as this we hope the Society will have a very successful year.

The first regular meeting following this was held the evening of Nov. 14. The feature of the programme for the evening was the elocutionary contest, which was a huge success. It has gone down in history as being one of the best contests ever held by the Society. The contest was an unusually long one, owing to the splendid selections rendered by the six contestants, along

with the musical programme, which in itself deserved much credit.

The programme was opened with a piano solo by Miss Planch, after which the women's contest was opened by Miss Marshall, who gave a splendid selection entitled, "At the Garden Gate." Miss Millward was the next elocutionist; she took the audience by storm with a selection entitled, "Seein' Things at Night." Miss Travers won the audience with a selection entitled, "King Henry of Navarre." A coronet solo by Mr. Savoie, accompanied by Miss Reichling on the piano, came next and was very much appreciated.

The men's contest was opened by Mr. Fiske, with a selection entitled, "Canada and the United States," which dealt somewhat with the international relationship between the two countries. Mr. Lothian was the next elocutionist; his selection was entitled "The Eve of Quatre Bras." As these words were spoken "There was a sound of revelry by night," they seemed to make a deep impression upon the minds of the audience, the effect of which was noted. Mr. Husk brought the contest to a close with a very fine selection entitled, "Give me liberty

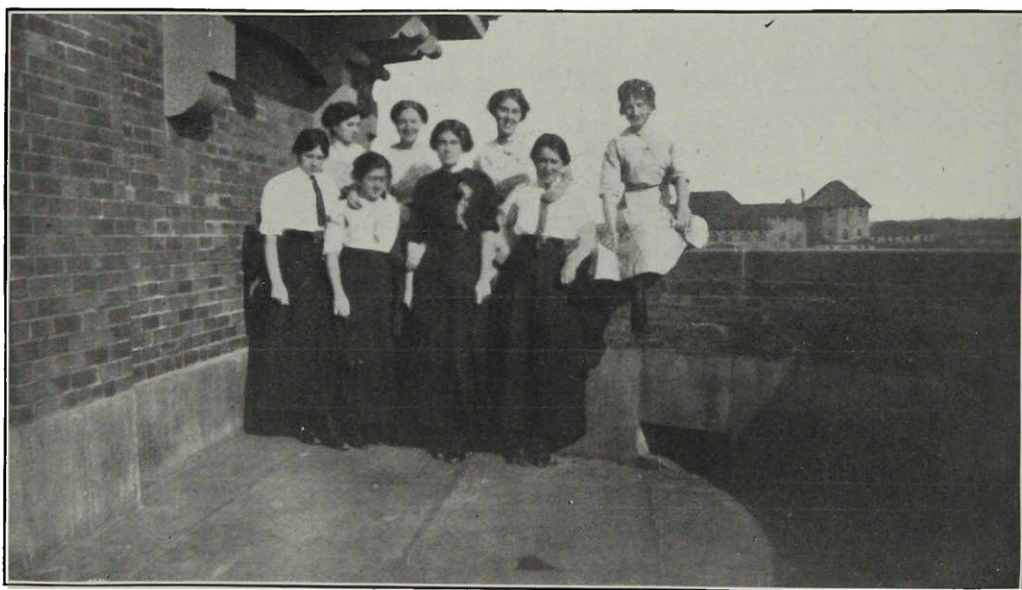
or give me death." Mr. Husk may develop into a politician of some note ere long.

The judges were Mrs. Lynde, Miss Fisher and Dr. MacFarlane, who now retired to decide upon who should be declared the winners. Their task was no small one. During their absence Miss Armitage gave a vocal solo accompanied by Miss Tait on the piano. After considerable time had passed the judges returned. Dr. MacFarlane announced the decision as follows: — Women's Contest — Miss Millward first prize; Miss Travers,

On Monday, 14th, a meeting was held for a debate as to whether an intending farmer should spend two or four years at college. Messrs. Drayton and Ritchie had the upholding of the four years, but Messrs. Schafheitlin and Muir were in great form and won the debate.

CLASS '15 LITERARY SOCIETY.

The Class of 1915, inspired by their success in field sports, are showing considerable interest in the literary work. They realize a number of their working members have dropped out,



On the Balcony.

second prize. Men's Contest:—Mr. Lothian, first prize; Mr. Fiske, second prize. The meeting then adjourned after singing "God Save the King."

T. F. R.

CLASS '14 LITERARY SOCIETY.

The first regular meeting of Class '14 Literary was held on Oct. 31st. The time was devoted to impromptu speeches by Messrs McFarlane, Husk and Durling. All the speakers were interesting in their summaries of how they spent the summer and their speeches on matters of agricultural interest.

but by the interest shown in the two meetings so far held, the present members are determined to fill the position of the absent class fellows.

The literary meetings will be held every Monday night during the session. It is their intention on these nights to hold debates, practice extemporaneous speeches and recitations. In this way they hope to best prepare themselves for the inter-year debating.

THE MODEL RECEPTION.

The first reception held in the Girls' Gymnasium this year was given by the Model Girls on Saturday evening,

Nov. 2nd, 1912. The "Gym" was artistically decorated with relics of the past, and the two cozy-corners, representing Macdonald and McGill, were in great demand and greedily held when once obtained.

The programme was indeed successful, and highly appreciated by all. A few of the musical items had to be cancelled owing to some of the performers having other business to manipulate.

The "grocery" contest was quite a new experience, and is prophesied to be a great help for the homemakers.

The drawing contests equally showed the artist's opinion of himself, and we hope that often the room was cleared of the threads of the spider's web. Beware says one experienced in these affairs. "It is a dangerous thing to unfold the doors of the refrigerator from whence spring so many hearts."

With the singing of "Auld Lang Syne" the merry party broke up. Some of the less fastidious gentlemen were kind enough to remain and learn how to wash dishes and put things away.

V. I. T.

PALESTINE COMMISSION.

Manners and Customs of the East.

On Oct. 23rd, Dr. Mueller, in connection with the Child Welfare Exhibition in Montreal, treated the College to a very interesting and instructive address on the manners and customs of the East. He told us how the various garbs denoted the provinces or parts of the country to which the wearer was native, and humorously demonstrated their primeval mode of bargaining, which would not require a very deep treatise on Political Economy, nor even the mention of Banking and Insurance Systems. Dr. Harrison was present and thanked Dr. Mueller for the address.

FORESTRY LECTURE.

On the evening of October 17th, we received a most excellent address on this question of vital interest to Canada, from one wise to know and competent to judge—we mean Mr. Lawler Secretary of the Canadian Forestry Association. In a splendid illustrated lecture he demonstrated the millions of dollars lost by fire, the necessity, in certain areas, of timber growth to preserve the water supply, the state of the world's timber market and the aesthetic glories of the forest. We thank Mr. Lawler for this fine lecture. The time will surely come soon when this important branch of the country's wealth will receive the attention it deserves.

A TRIP TO OKA.

On Oct. 26th nothing daunted by the rain, we set forth. Till we reached the famous village of Oka nothing exciting happened, except that one or two of our party were nearly shocked at viewing the holding hand exercises of some of the other inmates of our private car. Arrived in Oka our first difficulty was to make the natives understand our lingo; but soon some of our noted French students, Fiske and Macfarlane, assisted by Schaf, were busily engaged in disputing the price of a team to La Trappe with a worthy Frenchman; such terms as "Bien, too much price," and "tout six pour one dollar," were finally brought to a close by our decision to hit the trail on foot. The walking was extremely good, there being not over three feet of mud all over the road, but as we could all swim, that was a mere trifle. Ross did his best to keep up our spirits with songs (? but was savagely interrupted by the rank mutterings of Durling.

In due time we reached the College and Monastery of the Trappists, where

we were shown around very kindly by the monks. The new dairy and barns were especially interesting, coming second only to the wine cellars. After seeing everything of importance we sat down to a sumptuous repast, to which the click of the glasses and the soft swish of the cider lent their music.

After a hearty meal we again hit the trail (or mud) for Oka, the silence being broken every now and again by some member of the party trying to swim the mud puddles, and, needless to say, almost getting drowned. However, after

which had taken possession of our beds, a hundred or more were captured and heaved out of the window. The next morning we took the first ferry back to Como, fully decided to kill the ferryman on the way; but the appearance of two fair damsels on board so engrossed our two ringleaders that they forgot all thoughts of their sworn enemy. After an exciting race for the train, and another one for the breakfast on arrival in Ste. Annes, our adventures closed.

O. S. '14.



Class '13 on Field Day.

a few such experiences we finally reached Oka again, only to find that the ferryman had not come over to take us back to Como. After a long parley with the store-keeper and other prominent residents of the town, in which our French scholars again shone, we at last retired to the shelter of the hotel. Here we were ably entertained to music and recitations by some of our members, notably V. B. D., whose reputation in oratory is world wide.

At last, at midnight we retired, not to rest, but to hunt wild beasts of prey

ST. GEORGE'S CHURCH.

The religious requirements of the Protestant people of Ste. Anne de Bellevue have been the cause of much concern for several years past, and particularly during the last few months. In order to meet the requirements as far as possible, the hospitality of St. George's Church has been offered to students and persons of other denominations in the vicinity. Evening Prayer, which has heretofore been at 7.00 p.m., will now be held at 4.00 p.m. The service at 7.00 p.m. will be of a non-liturgical

character, and ministers of the several denominations will be invited to preach.

It is hoped that the plan will meet with the support it deserves, and assist in the creation of a more mutual and better understanding among the people.

As the Union Services have been discontinued in the Assembly Hall, this movement and generosity of the Anglican Church is much appreciated by the student body.

Y.M.C.A. NOTES.

The Association this year continues the good work of former years and has in addition started a new activity, the great need for which has been felt since the inception of the movement at the college. I refer to the Bible Class. We have not yet found it practicable to start Bible study groups, but the first step has been taken in the form of a general Sunday afternoon Bible Class for which we have been fortunate enough to obtain Dr. Macfarlane's competent direction.

The Sunday morning addresses have been fully up to the high standard set in former years. The speakers thus far were Dr Lynde, Professor Lochhead, Mr Dowie, Professor Klinck, Professor Kneeland and Dr. Snell.

Mr. Barker, general secretary of the Calcutta Y.M.C.A., recently gave an address in the Assembly Hall on the work of the Association in the East. Mr. Barber's able manner of imparting to us his intimate knowledge of the customs of the Hindus, and of the struggle of Christianity against Hinduism, proved highly entertaining and instructive. With the advent of the cold weather, the fortnightly fireside song services have been resumed. These services retain their popularity as of old, owing no doubt to the high standard of singing which obtains through the presence of some members of the more musical sex from across the campus.

E.M.D.

CLASS '16 ORGANIZES.

Since our last number, the above class has settled down to business. The following are their officers:—

YEAR.

Hon.-Pres.—Professor Barton.
Hon. Vice-Pres.—Mr. Clement.
President—H. D. Mitchell.
Vice-President—L. Jones.
Secretary—J. H. McQuat.
Treasurer—J. G. C. Fraser.
Committeeman—Geo. Hay.

LITERARY SOCIETY.

Hon. Pres.—Dr. Macfarlane.
Hon. Vice-Pres.—Dr. Hamilton.
President—J. H. McQuat.
Vice-President—J. Moynan.
Secretary-Treasurer—George Boving.
Committeemen—L. Jones, Chas. Russell.

THE GRADUATING CLASS.

A Social Treat.

On the evening of Wednesday, November 27, Class '13 had a most enjoyable time at the home of Professor and Mrs. Klinck, where they were sumptuously entertained by the members of the Cereal Husbandry staff. Mrs. Cutler and Miss MacMi'an also graced the occasion by their presence.

The evening was of a musical and poetical nature, luxuriant with the buoyancy of kindred spirits. There was also a guessing and a sketching competition, the results of which were held in suspense until after refreshments, when the winners received substantial prizes, very *tastily* put up.

After the singing of "Auld Lang Syne" and three cheers had been given for the hosts and hostesses, the merry party proceeded homeward.

THE KING'S DAUGHTERS.

Under the presidency of Mrs. Harrison the King's Daughters have commenced what promises to be their most successful year.

Last year, through their efforts, a Victorian Order Nurse was established in Ste. Annes, and a very busy time she has had since her arrival.

A work such as this needs financial aid to ensure its continuance, and to this end a Tea Room has been opened by the King's Daughters, on Grand Trunk Avenue. Tea is served every Saturday afternoon from 3.30 to 6.30. The tea room is in the hands of a special committee and they are to be congratulated on the excellence of the service. It is to be hoped that the students of the college and the inhabitants of Ste. Annes will continue to help this noble work in every way possible.

The personnel of the King's Daughters for the year is as follows:—

President—Mrs. Harrison.

Vice-President—Mrs. Shaw.

Treasurer of Victorian Order Ac.—Mrs. G. N. Dowker.

Treasurer of General Purpose Ac.—Mrs. King.

Recording Secretary of General Meetings—Mrs. C. Stephen.

Recording Secretary of Executive Meetings—Mrs. Roast.

Corresponding Secretary—Mrs. Foy.

TEA ROOM COMMITTEE.

Convener—Miss Fisher.

Secretary—Miss Hill.

Treasurer—Miss Gibbon.

Designer—Miss Kruse.

STORES AND VISITING COMMITTEE.

Convener—Mrs. Shaw.

Mrs. Foy, Mrs. Powter.

A LECTURE ON CEMENT.

On Tuesday evening, Nov. 26th, an illustrated lecture entitled "Uses of Cement" was given by Mr. Brunet, of the Canada Cement Co., Ltd.

He demonstrated the superiority of cement over wood for various farm

buildings from a sanitary standpoint, and also their greater durability. He showed in a most convincing manner that cement was much more sanitary in the case of milk rooms, stable floors, etc. The cheaper transportation of farm products to market over cement roads, as compared to ordinary earth roads, was brought out in a very striking manner by Mr. Brunet in his lecture.

W. L. McF.

SCHOOL FOR TEACHERS.

The chief aim of the Literary Societies in this school is to develop in its students the ability to speak before a small assembly of people without undue laborious preparation. With this in view much time is devoted to impromptu debates and speeches in which each member of the society is called upon to voice his views on subjects of interest to the class without previous preparation.

Section A held a very successful meeting Nov. 15th, the chief feature of which was an impromptu debate. The subject chosen was:—Resolved that home lessons should not be assigned but that children should be detained in school to do the work. The negative won.

Section B. At the last meeting the program was a debate. Resolved that Nature Study is of more value than the study of Classics. The affirmative was ably upheld by Miss Slack and Miss Rorke, while Miss Cowper and Miss M. Buzzell the part of the negative.

Section C. A most interesting half hour was spent by Section C when Miss Marsh gave a detailed account of the present war.

Section D. Nov. 11th, Section D had an evening with Shakespeare. A paper on his life was read and this was followed by a few selections from one of his plays.

SCIENCE SHORT COURSE POEM.

Miss Perkins, our President and Diamond Ring Girl,
 Never loses her senses or gets in a whirl;
 But is cool and composed as she stands
 at her post,
 Whether oiling a floor or cooking a
 roast.
 Eva Friedman, her room mate, is scrupulously neat,
 And even her top bureau drawer can't
 be beat.
 She hustles and bustles around in a fuss,
 But somehow her things never seem in
 a muss.
 Minnie Clark, now known as our dimpled Min,
 Is the farthest of all of us from being
 thin;
 She has gained twenty pounds through
 the bustle and din,
 Now she's 'fraid lest she get a third
 double chin.
 We're glad that her roommates aren't
 growing fat too,
 'Cause their room is the smallest, and
 what would they do?
 Then there's Rosie and Grace, and dearest Jeannette,
 They have not—Oh, my no! kicked up
 much as yet;
 But we all hate to think of the day they
 begin'
 And are sorry for some that the walls
 are so thin.
 Jessie Church rooms next door, she's
 the sport of the course,
 She can act, kick up generally, and yell
 till she's hoarse.
 Helen Lohead and Florence room with
 her to date,
 Helen L., I believe, makes a first-class
 roommate.
 Florence Bamford's the girl who once
 walked on the track,
 But let's all keep it dark how she ever
 got back.
 Then comes B. D. McIntosh, Elsie
 Aird, Martha Brooks.

Guaranteed by us all to be first-class
 fudge cooks.
 The first is a dear and a first-class talker,
 'Nough said about B. D., we all of us
 love her.
 Then Elsie, thanks be, our new Proctor
 was made,
 She is such a sweet girl, and far from
 being staid.
 Then Martha, she's quiet and sweet, but
 my land!
 When once she gets started she'd
 drown any band.
 Next, the two sisters, Dorothy and
 Louise,
 When you are with them you are quite
 at your ease;
 To tell which is which they are called
 here by some,
 Miss Dorothy Lyall and the very tall
 one.
 They are always together and room
 with Gertrude,
 She is sweet, kind and gentle, and never
 is rude.
 Then there's Kathleen Baker and Edith
 M. Strachan,
 Whose name, strange to say, is mostly
 said wrong.
 K. is our clever one—knows protein from
 fat,
 She can tell you the reasons for this and
 for that.
 Then comes Eileen Dwyer, rooms alone
 and in state,
 Her roommate, Ruth Workman, has left
 us of late,
 She's the belle of the class, and the Short
 Course love her,
 But she really should not be away from
 her mother.
 A frying pan she's just learned to know
 by its name,
 And her ignorance of wash tubs is really
 a shame,
 Her duty in life is easily seen,
 She should live upon things only fit
 for a Queen.

M. H. B., '12.

Class Presidents in the Men's Residence.



THE senior year have chosen their president Wm. Gibson, from the ranks of those who hail from the "Auld Land." "Bill," as he is generally known, was born in Kirkcubrae, Scotland, and spent his early days there, on his father's farm. Coming to Canada seven years ago he has devoted himself to a study of agricultural conditions of this country. In the autumn of 1909, he entered Macdonald with Class '13. In his sophomore year, he was live stock editor of the magazine, and secretary of the Athletic Association. During his third year he was president of the Athletic Association and now as senior president he is also president of the students' council. He was a member of the team which won the trophy at the Chicago Live Stock Judging competition last year and his reputation as a stock judge is well established. Knowing his capabilities we do not hesitate to predict a brilliant future for him.

In the village of St. Laurent, Que., George W Muir was born some twenty-two years ago.

Muir received his early education at Montreal and later at Howick, to which place he moved at a tender age.

At seventeen George set out working for himself and at nineteen made a trip across the continent to the International Exposition at Seattle.

In the fall of 1910, Muir entered Macdonald and has here made a name for himself—in sports, in literary and in class work, making the McGill Track Team in 1911, the class debating team, 1911, and taking a high standing in his class, besides holding many and varied offices. On the other side of the campus George's pleasant smile

has won him many friends. These various accomplishments, together with his good humor and pleasant manner, have this year won for Muir the greatest honor his class could give him.

In E. M. Ricker the sophomore class have a worthy leader. His home is in Malden, Mass., and he graduated from the high school of that city in 1907. He immediately went into the employ of the B. & M. Railroad, and it was not until he had been there five years that he realized that his calling was agriculture. Since his advent to Macdonald College he has gained many friends through his untiring efforts in behalf of his Alma Mater. He is not only president of his class but secretary of the students' council, year representative of the Y. M. C. A. and captain of the College and year baseball teams. His specialty is horticulture.

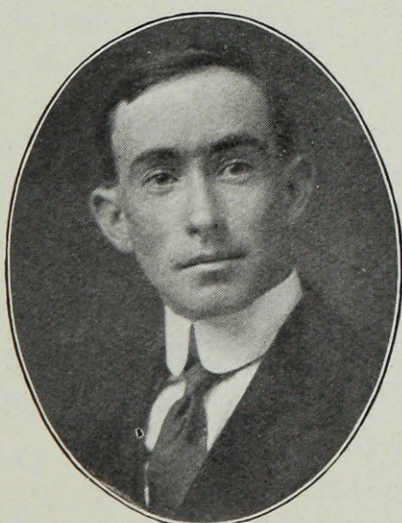
H. D. Mitchell, President of Class '16, was born at Drummondville, Que., toward the latter part of last century. The more elementary phases of his education he received at his native place. Later he went south to Pawtucket, Rhode Island, where he attended the High School, from which he graduated in 1910. In 1912 we find him enrolled in the School of Agriculture as a freshman, who is at the same time a sophomore, for he is one of the few who are taking two years in one. So far as can be judged, the freshmen have not made any mistake when they elected Mr. Mitchell to be their president. He is a lean, keen and energetic looking individual, one of the kind that usually "gets there."



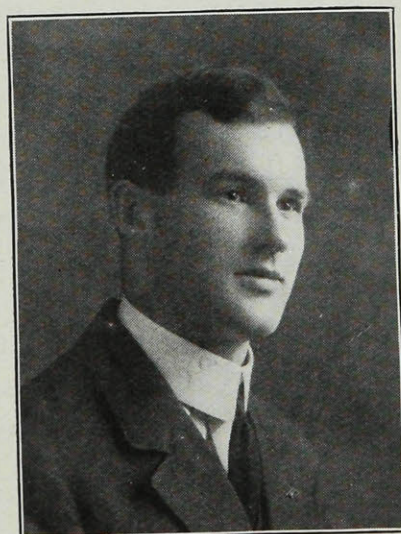
Wm. Gibson.



George W. Muir.



H. D. Mitchell.



E. M. Ricker.

Faculty Items.

Macdonald College Club.



THE first monthly meeting of the Macdonald College Club for the season of 1912-13 was held at the home of Prof. and Mrs. Klinck on Thursday evening, Nov. 14th. This meeting, as is the custom, was social in character. The programme was furnished by the members and consisted principally of short stories or interesting vacation experiences. A large number contributed to the success of the evening's entertainment.

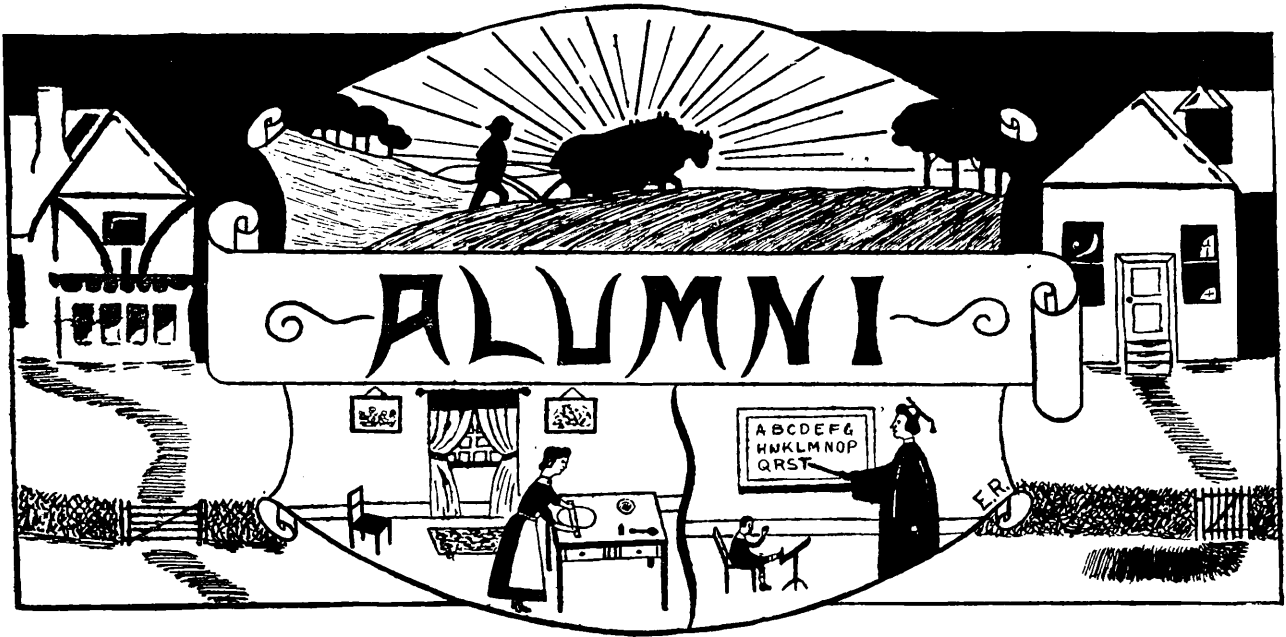
The President, in outlining the object of the Club, directed attention to the need for such an organization. The members of the Faculty and of the Staff were, he said, a busy people. As a result, the tendency was for acquaintanceships to become professional rather than personal. The early recognition of this fact accounted for the organization of the Club, the object of which was to promote sociability among and provide intellectual recreation for its members. The present cordial relations existing among the different Faculties, and the growing feeling of respect entertained by the members each for the work of the others, was in no small measure directly due to the influence of the Club in

making possible closer personal acquaintanceships.

While this was true of the past, the fact was emphasized that any permanent organization must have, not only a good reason for its existence, but must continue to justify itself by continuing to render effective service. On behalf of the Executive and Programme Committees he bespoke the active co-operation of all the members in abundantly justifying the existence of the Club for the coming season.

As heretofore, the meetings will be social or literary in character. Those of a social nature will be held in the homes of members; literary meetings will be held in the College library. Important as is increased sociability, it is the sense of the Executive that at least three or four of the meetings be addressed by the best outside talent available.

Reference was made to the departure of members who have been actively interested in the work of the Club since its organization, and a cordial invitation to take membership was extended to those who have recently joined the Faculty or the teaching Staff of the College.



HOUSEHOLD SCIENCE.

A programme has come to hand of the Union Dry-Farming Congress held in Bloemfontein, Orange Free State, Oct. 21st to 26th, under the patronage of His Excellency, the Right Hon. Viscount Gladstone, G.C.M.G., Governor-General. It will interest the *Macdonald College Magazine* readers to learn that Miss J. C. Van Duyn (Household Science '10), of the Union Department of Agriculture, Pretoria, was the General Secretary of the Household Science Congress and took part in the programme as well.

Miss Daisy Harrison, '10, of Gondola Point, Kings County, N.B., was appointed, last spring, supervisor of the Women's Institutes for the Province of New Brunswick. She leaves in February for Columbia University to take a course in Demonstration Work.

Miss Mary Ratchford, '11, Amherst, N.S., nurse-in-training, Children's Hospital, Boston. In connection with her work she is at present taking a four months' course at Simmons College.

Miss Jean MacIntosh, who left last year owing to illness, is returning after Christmas to complete her course.

Miss Almyra C. Pitblado, '11, is taking a course in Art, French and German at Lassell Seminary, Auburn-dale, Mass.

Miss E. Sevigny, '11 (Autumn short course), has charge of the dairy at Caledonia Springs.

Miss Hannah Shamber, '11, Kingston, N.B., who has been teaching in the Consolidated School in Kingston, is now teaching in Montreal.

Miss Irene Robertson, '12, enters the Montreal Western Hospital in January to train for a nurse.

Miss Evelyn Massy, '11 (Spring short course), nurse-in-training, Montreal General Hospital.

Miss Marion Ruddick, '12 (Autumn short course), nurse-in-training, Children's Hospital, Toronto.

Miss Katherine Little, '11, Vancouver, B.C., nurse-in-training, General Hospital.

The marriage of Miss Mary I. Innes, '10, of Coldbrook, N.S., to Mr. Charles B. G. Low, took place on October 26th at the home of the bride.

Miss Eleanor Gardener, '12, has resumed her studies at Whitby Ladies' College.

TEACHERS.

We have had the pleasure this year of seeing many graduates of former years among us. Though their visits are not long, we welcome them to the halls of their Alma Mater with pleasure. Among the number was Miss G. Pope, class '10, of Hatley, who spent a week end with us in October.

Miss Mabel Cromwell, class '10, is principal of Sawyerville Model School and has as her assistant Miss Agnes Farnsworth, class '12.

Miss Ethel Mosher is teaching in Clarenceville.

Miss Gertrude Butler is teaching in the Model School, Lake Megantic, Que.

Miss Mabel Locke and Miss Florence Egg, both of class '12, are teaching in the Alexandra School, Montreal.

Miss Ora Porter, '10, is teaching at Thetford Mines, Que.

The engagement is announced of Miss Miriam Planche, class '10, to Mr. John Egberg of East Angus.

Miss Mary McClure, class '11, is teaching in Lachute Academy.

Misses Alice Smith Theresa Stewart of class '12, and Misses Marion Waters, Ferol Armstrong, Hazel Jones of class '11, are all teaching in William Dawson School, Montreal.

Miss Dora Rothera, class '10, and Miss Martina Mackay, '08, are teaching in East Angus.

The Fairmount School is indeed fortunate in having among its teachers five Macdonald graduates: Misses Molly Tucker, '12, Ethel Griffith, '12, Jessie Griffith, K. Yeats, and L. Bullock of class '10.

Miss Selia Honey, class '10, is teaching in the High School, Montreal West.

Miss Roslyn Taylor, class '09, finds that she cannot resist the charms of Macdonald, and expects to return and take the Science Short Course after Christmas.

Miss Mabel Truell is teaching in the Academy at Magog, Que.

Miss Juanita Collins, '10, was married in July to Mr. George Bliss, St. Albans, Vt.

Misses Emma and Elizabeth Read are teaching in the Lorne School, Montreal, Que.

Miss Ida Ramsdell, class '09, is teaching at North Hatley.

Miss Amy Caldwell is teaching in the Royal Arthur School, Montreal.

Misses Beulah Graham and Myrtle Gould, both of class '10, are teaching in the High School at their home, Granby, Que.

Miss Murial Buckland, class '10, and Miss Alice O'Brien, '12, are teaching in the Sarah Maxwell School, Montreal.

Miss Hattie McManus is teaching in Rivers, Man., and is quite charmed with the West.

In the Central School, Sherbrooke, Que., four out of the six teachers employed are Macdonald graduates: Miss Jackson, '12, Miss R. Fuller, '11, Miss J. Pearson, '10, and Miss J. N. Fales, '08.

Miss Jean MacLeod, class '11, is teaching in the East Sherbrooke Ward School.

Miss Margaret Manson, class '10, is teaching at Ayers Cliff, Que.

GRADUATES IN AGRICULTURE, CLASS '12.

R. Newton is one of the appointed Agricultural Representatives and has the district of Shawville, Que., as his field.

M. B. Davis is Manager of a fruit farm at Bridgetown, N.S., and is applying the scientific knowledge gained while at Macdonald.

R. S. Kennedy is Assistant Superintendent of the Experimental Farm at Lacombe, Alta.

L. V. Parent is Representative for the district of Rougemont, Que. Between applying science in Agriculture and growing a moustache "Trix" has his time fully occupied.

E. A. Lods, as Quebec Representative, is working in the interests of the German Potash Syndicate with headquarters in Toronto. Lods pays occasional visits to his many friends at Macdonald.

W. W. Baird has charge of Sir Wm. Van Horne's large estate on Minister's Island, St. Andrews, N.B. "Whyllie" paid a flying visit to Macdonald in September in quest of buying pure-bred live stock and to give evidence for the beneficial effect of N.B. climate in growing the "Upper Lip" crop.

A. A. Campbell has district representative work for the College, with Lennoxville, Que., as centre.

"Doc" Robertson sends his best regards from Davidson, Sask., where he is Live Stock Manager for the S. G. Detchon farms.

J. M. Robinson is assisting Professor W. S. Blair on the Dominion Experimental Farm at Kentville, N.S.

After spending a greater part of the summer in Switzerland, "Bill" Dreher has returned to Canada to accept the position of Assistant in Horticulture at the Central Experimental Farm, Ottawa.

L. C. Raymond is Agricultural Representative for the district of Farnham, Que.

"Bruce" Flewelling is in charge of Horticultural Work for the N. B. Department of Agriculture.

At Florenceville, N.B., we have the location of the Fiske Bros. They have taken over the "Home" farm and are seeking to carry out the science of agriculture on a practical basis. In that they are successful proves that agricultural education is beneficial to farmers in general, even to the extent of a Bachelor's Degree, and does not teach men away from the farm but intensifies a desire toward it.

J. A. Simard has lately received the appointment of Quebec Representative for the Dominion Seed Branch with headquarters in Ottawa. At present he is busy outlining his policy with regard to a general crop improvement of the province. We feel confident that success will meet his efforts.

F. S. Brown is Assistant to Dr. Malte, Dominion Agrostologist, and during the past season has been employed in crop improvement work at the Central Experimental Farm, Ottawa.

J. R. N. Macfarlane is Landscape Architect in Westmount. "Micky" calls on his Macdonald friends during many of his week end trips to St. Annes.

GRADUATES IN AGRICULTURE, CLASS '11.

E. M. Straight, who was connected with the Horticultural Department of the College, has been appointed Demonstrator in Horticulture for the State of Maine, U. S. A.

C. M. Spencer favored his Macdonald friends with a short visit while en route to his home in New Zealand. "Spence" intends studying the Agricultural prospects of New Zealand and British Columbia with a view to taking up farming.

F. S. Grisdale has accepted an appointment as Agricultural Editor of the Nor'-West Farmer, Winnipeg, Man. Until lately, "Frank" was connected with the Lethbridge Experimental Farm, Alta., but decided to follow his journalistic tendencies when the opportunity offered.

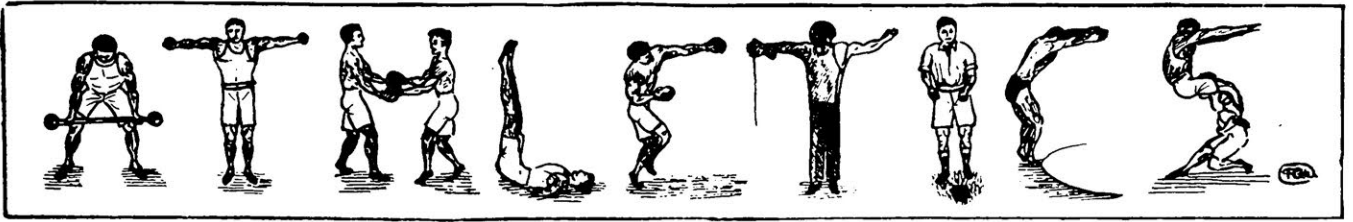
"Alf." Savage paid his Macdonald friends several visits during the summer vacation. He is continuing his "Vet." work at Cornell with the D. V. M. two years in the future.

C. M. Williams was appointed Horticulturist for the Province of P. E. I. last April, and reports favorable impressions for the future of fruit growing on the Island.

R. W. D. Elwell has been appointed as assistant to the Provincial Board of Education for Alberta.

W. H. Brittain, Provincial Plant Pathologist for British Columbia, sends his regards to all his Macdonald friends. He reports an enjoyable field and plenty of work.

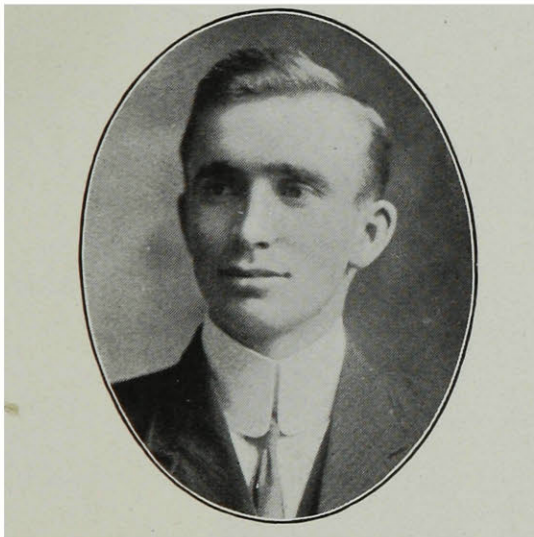
C. Sweet, as Representative of the Dominion Seed Branch, has the district of Sherbrooke, Que., in which to carry out his work of crop improvement.



FIELD DAY.



RIOR to October the 18th, our fifth annual Field Day, the weather had been cold and windy, so it was with a feeling of joy that we welcomed the ideal autumn morning which blossomed into a still more beautiful afternoon. It having been proclaimed a holiday, the students of the three schools, with their friends,



J. K. KING, '13.

President M. C. A. A., and winner of the Individual Championship Trophy in Field Day.

assembled on the campus early to watch the events and cheer their favorites to victory.

One drawback to the day's sport was having to go from the girls' to the men's Campus for the jumps where a permanent jumping pit had been dug, the races being held on the girls' campus where a quarter-mile track had been laid out. These little trips, however, did not interfere materially, except to

delay the events a little. We are living in hopes of being able to overcome this difficulty another year by having a permanent cinder race track on the boys' campus.

All those who had any notion of competing in any of the events on the list had been training systematically ever since the College opened, and accounts of their performances, both past and present, had caused considerable speculation as to the probable winners.

On the Monday, Tuesday and Wednesday evening previous, the preliminaries of the short races, the final of the two-mile race, and the first and second year Hose and Reel races were run off so as to leave only the finals of all the events for Field Day. The two-mile race was won most creditably by Grove White in record time, although it was severely cold and a high wind was blowing. Martin made a good runner-up and got second place, with Muir third. The entries in the preliminaries of the short races are too numerous to mention here suffice it to say that the first two in each heat were considered eligible for the finals.

Mr. Kenneth King, the worthy President of the Association, made an excellent showing, breaking three records, and winning four firsts and one second, thus securing the individual championship cup donated by the Association. Another competition well worthy of special mention is Mr. Eric Grove White. Besides winning the two-mile race, he won the mile and half-mile,

breaking the records in both of these as well as in the former, and carrying off the second individual championship cup so generously donated by Dr Sinclair. Each and every event was well contested, and the runners-up deserve their share of the praise, considering the fact that so many records were broken.

The unprecedented success of our fifth annual Field Day, those of us who have been here in previous years can bear testimony to, and this is a tribute to

High Jump:—1st, Emberly '13; 2nd, Evans '15 3rd Smith '16. Height: 5 ft. 1 $\frac{3}{4}$ inches.

Half mile:—1st, White, '15; 2nd Muir, '14; 3rd, Schafheitlin, '14 Time: 2 mins. 1 sec.

220 yards:—1st, King, '13; 2nd, Evans, '15; 3rd, Walker, '15 Time: 22 4-5 secs

Broad Jump:—1st, King, '13; 2nd, Smith, '16; 3rd, Fraser, '16. Distance: 17 ft. 9 ins



Class '15—Relay Team.

the work of Mr. King and his committee, together with many members of the Faculty, whose untiring efforts helped in no little degree to make the day one to be remembered in the College history.

The following is a list of events and the winners:

100 yards:—1st, King, '13; 2nd, Evans, '15; 3rd Walker, '15. Time 10 3-5 sec.

440 yards:—1st, King, '13; 2nd, Walker, '15; 3rd, Sutton, '15; Time: 49 2-5 secs.

Polo Vault:—1st, Cooke; '13; 2nd, Smith, '16; 3rd, Hyndeman, '16. Height: 8 ft. 6 ins.

One Mile —1st, White, '15; 2nd, Muir, '14; 3rd, Martin, '16. Time: 4 mins. 41 secs.

120 yards Hurdles:—1st, Walker, '15; 2nd, King, '13; 3rd, Evans, '15. Time: 19 2-5 secs.

Hop, Step and Jump:—1st, Cooke, '13; 2nd, Smith, '16; 3rd, Evans, '15. Distance: 38 ft. 9 ins.

Throwing Baseball:—1st, Sutton, '15; 2nd, Ricker, '15; 3rd, Smith, '16. Distance: 281 ft. 9 ins.

Two-mile:—1st, White, '15; 2nd, Martin, '16; 3rd, Muir, '14. Time: 10 mins. 27½ secs.

"Robertson Cup" for outdoor sports; Seniors, 38 points; Freshmen, 17 points; and the Juniors, 8 points.

The individual standing of competitors with more than five points is as follows: King 13, 23 points; White, '15, 15 points; Evans, '15, 11 points; Cooke, '13, 10 points; Walker, '15, 10 points; Muir, '14, 7 points; Sutton, '15, 6 points.

Five points were allowed for first place, three for second, and one for third in all events.



Class '15—Hose and Reel Team.

Inter-Year Relay Race, 880 yards — 1st, Sophomores; 2nd, Seniors; 3rd, Juniors; 4th, Freshmen.

Hose and Reel Race:—1st, Sophomores; 2nd, Juniors; 3rd, Seniors; 4th, Freshmen.

The Sophomores won the day with 45 points, this entitling them to the

The officials for the day were:—Referee, Dr. Harrison; Judge, Prof. Klinck; Starter, Prof. Barton; Time-keepers, Dr. Lynde and Dr. MacFarlane; Scorer, Syd. Dash; Announcer, Ben. Richardson; Track manager, Fred. Ritchie; Track policemen, Messrs. O'Brien, Ross, McKenzie and Hutchings.

PRESENTATION OF PRIZES.

The presentation of the medals and cups won by the competitors on Field Day took place the same evening in the Assembly Hall. The President of the Athletic Association officiated and opened the ceremonies with a short address

encored. The Chairman then called upon Dr. Harrison to address the gathering. He spoke briefly, congratulating the winning year, the winners of the individual championship trophies and commenting upon the very sportsman-like spirit shown by the runners-



Class '15—Track Team.

in which he touched upon the aims of the Association, the successful Field Day we had just had and the number of records which had been broken. The audience then enjoyed the rendering of a violin solo by Mr. Schafheitlin, accompanied by Mr. Mapp, which was heartily

up. He also pointed out that the Athletic Association, to do the most good, should so arrange its program that all members would be able to participate in the games, and intimated that this condition could best be arrived at by having two or more teams

in each line of sport. He then closed his remarks by announcing that he would do all he could towards having a cinder track ready for the sports next year. This was the signal for loud and long cheering from the students in Agriculture.

The Chairman then asked Mrs. Harrison and Mr. Ness to present the prizes. The winners in each event received their medals, a silver one for first prize and a bronze one for second prize,

23 points, and the "Dr. Sinclair Cup" for second individual championship was won by Grove White with 15 points.

The prize list completed, the audience were then treated to a cornet solo by Mr. Williamson, accompanied by Mrs. Harrison, after which three cheers were given for the champions of the day. At intervals throughout the evening we had been treated to a variety of class yells, and these again broke loose at the close. After singing a few College songs,



College Football Team.

amidst loud applause; some of the more favored ones being tendered bouquets as they returned from the platform.

The special prizes were the "Dr. Robertson Cup" for outdoor sports; the "Dr. Peterson Cup" for the Inter-Year Relay Race, the "Vaughan Cup" for the Hose and Reel Race, all of which were won by the Sophomores; the Association Cup for individual championship was won by King with

a very pleasant evening was brought to an end by singing "God Save the King."

ASSOCIATION FOOTBALL.

Never since the opening of the College have we experienced such a dearth of football players, due to the fact that nine men of last year's team are now away from the College. We have consolation, however, in the fact that the team is this year drawn, for the most part, from the

Freshmen, several of whom already are acquainted with the principles of the game, so that with proper and sufficient training we ought next year to have a sound team.

To secure the greatest efficiency, inter-class marches or mixed teams, such as have been organized in baseball, should be formed and regular practice matches played immediately the College opens, or, as a means of keeping in touch with the games, some of these practices might be held the previous Spring.

We tied with the Diocesan Team on October 29th, got beaten by the Presbyterian Team on November 9th, and have still the Wesleyan Team to play.

INDOOR GAMES.

Now that the inclemency of the weather has practically curtailed all outdoor sports, attention has been turned to the playing of indoor games. Early in November the Association elected Mr. Ricker to the captaincy of the Baseball Team and Mr. Walker to the captaincy of the Basketball Team. Both these men now have their games well under way. Mr. Ricker has organized a baseball tournament in which there are six teams, each suitably named, that are to play for championship honors. The first of these games, *Shin Diggers vs. Rusty Mugs*, ended 14-7 in favor of the former. Mr. Walker is at present negotiating to enter a team in a Basketball league in which we hope he will be successful. All this practice leads up to our annual athletic meet with the boys of the O. A. C. It is our turn to visit them this year, the date being set for the 14th and 15th of February.

The Inter-class games are also a source of much interest at present.

The following is the schedule of games to be played, the winners of which hold the coveted "Dr. Robertson Shield" for one year.

Nov. 13th:—Seniors vs. Sophomores, Baseball.

Nov. 20th:—Juniors vs. Freshmen, Baseball.

Nov. 27th:—Seniors vs. Sophomores, Basketball.

Dec. 4th:—Juniors vs. Freshmen, Basketball.

Jan. 15th:—Seniors vs. Freshmen, Baseball.

Jan. 22nd:—Juniors vs. Sophomores, Basketball.

Jan. 29th —Juniors vs. Sophomores, Baseball.

Feb. 5th:—Freshmen vs. Seniors, Basketball.

Feb. 12th:—Seniors vs. Juniors, Baseball.

Feb. 19th —Seniors vs. Juniors, Basketball.

Feb. 26th:—Freshmen vs. Sophomores, Baseball.

March 5th:—Sophomores vs. Freshmen, Basketball.

THE RINK.

With the coming of the cold and frosty nights our thoughts turn to one of our favorite winter pastimes, namely, skating. It would be hard to find in all the sources of recreation enjoyed at the College one more generally favored than the College rink. A committee will be formed in the near future, as in other years, to look after the preparation and management of the rink, and we hope that it may have the hearty support of the entire student body.

G. W. M. '14.

Girls' Athletics.



ON October 24th a meeting of all the girls of the Athletic Association was held for the election of officers for the year. Those elected are as follows:—

Hon. President, Miss Torrance.
 President, Bessie Reichling.
 Vice-President, Marjorie Palmer.
 Secretary, May Boyd.
 Treasurer, Helen Buzzell.
 Baseball Manager, Vivian Travers.
 Basketball Manager, Sybil Runk.

YEAR REPRESENTATIVES.

1st Year Science, Beryl Reynolds.
 2nd Year Science, Helena McNaughton.
 1st Year Teachers, Dorothy Slack.
 2nd Year Teachers, Myrtle McPherson.

We were fortunate enough to secure Mr. Powter as our basketball coach, and every Wednesday night a practice is held in the gymnasium. These practices commenced November 6th with a large number of very enthusiastic beginners. Before Mr. Powter's arrival the gymnasium is a regular bedlam of girls. Basketballs and baseballs fly in every direction, while baseball clubs vainly endeavour to hit the balls that, in many cases, strike other girls. Order is soon enforced when Mr. Powter enters the gymnasium and a good practice of the different steps in basketball is held, followed by many regrets as the study gong sounds and puts an end to our practice.

Owing to the keen interest taken in basketball by Miss Amy Moore, several informal practices were held during the

past two months; and though no real matches have, as yet, been played, both the Model and Elementary girls have been hard at work practising for what we expect will be a most exciting game, which will take place on Monday, November 18th, the result of which will be in the next issue.

Our first baseball practice, on November 12th, was a most interesting and amusing scene. Mr. Ness has kindly consented to act as coach, and as such, showed us the various ways of catching, receiving and returning the balls. The amusing part was to see the girls batting the balls (when they didn't hit only air) and send them flying to every corner of the gymnasium. After we have had several of these practices we hope soon to organize some good teams.

These practices of baseball and basketball will, we hope, continue successfully throughout the college year and lead to some very exciting matches between the different schools and sections, which will take place in the course of a few weeks.

The swimming tank must not be forgotten. On Saturday mornings, it is a very popular place both for the expert swimmers and the spluttering beginners. The latter, though, are improving rapidly as a result of the valuable instruction given by Miss Torrance.

On a whole the girls enter into, and enjoy every branch of their athletics, and so far 1913 has proven to be a very successful year for the Athletic Association.

B. G. R.



Will you walk into my parlor?
Said the turkey to the whale.
It was snowing in New Jersey,
For the girl was fat and frail.
Once, I guess, there was a kitty.
Do I have another guess?
Sweetheart, really you're a lobster
As the paper goes to press.

Oh, her name was, so they tell me,
And her case was very sad.
Did you ever see a seashell
Making faces at its dad?
It is such a tearful story
That I cannot tell the rest.
Thanks, a little of the liver;
That's the part that I like best.

Is the whichness of the wherefore
Really good to eat and drink?
Would a camel be a chromo
If it wore its whiskers pink?
Down beside the swishing river
I was sitting by her side,
And the man behind the counter
Took his raw tomatoes fried.

Comrades, leave me here a moment,
For I cannot tell a lie.
No; I do not know the Whartons,
But my uncle killed a fly.
He was happy till he met her,
But the rain would never cease
Run, ye ring tailed ragtime roosters;
They are calling the police.—Ex.

Mr. Lancaster (to Solomon at the tea given to the choir):—"Can you dance?"

Solomon:—"I know all the holds, but I can't do the step."

* * *

Professor:—"Mr. Snowdon, why are you going so roughly about that experiment?"

Snowdon:—"The directions call for a rough determination."

* * *

She: (with a regretful sigh)—"The day of truly great men is long passed."

He:—"But the day of beautiful women is not; so cheer up, my dear."

She: (blushing and much confused)—"I didn't really mean that."

* * *

Mr. Hammond (calling the roll)—"Where is Richardson?"

Middleton:—"He has gone to see if there is any mail."

Mr. Hammond (thinking aloud):—"More likely it is the female."

* * *

Mr. Bryce (lecturing in Entomology)—"The best system of control for oyster shell scale is to spray with kerosine emulsion."

White:—(writing desperately):—"What's that? Ammonia and Scott's emulsion?"

Miss Q.:—"Was Dick out walking with anybody while I was away on Saturday?"

Miss B-r-no:—"Yes, I saw them at a distance."

Mis Q.:—"Could you swear to the girl?"

Miss B-r-no:—"You bet I did."

* * *

Miss B. (to Fauvel):—"Why don't you talk occasionally?"

F.:—"Well, I guess if I stay long beside you I shall soon learn."

She (to partner whom she is dancing with in the Gym) —"What piece is she playing?"

He:—"Huddle up and cuddle up with all your might."

* * *

Mr Dupré:—"The circumference of a circle will be found to be $2 \pi r$ " (2 pie are).

Cochrane:—"Then, I suppose that the circumference of a square will be found to be 2 pudding is."



Emberley Taking an Easy One.

Bunch of boys from Day School:—"Mr. Raymond can you tell us where Mr. King is?"

Raymond —"What do you want with him?"

Boys:—"We are having our sports to morrow and so we want to borrow his high jump."

* * *

Turner (to maid):—"Please get me a knife for this pie."

Maid:—"We don't serve knives with the pie."

Turner:—"Well, give me an axe then; it will do just as well."

Miss De——e:—"What are you looking so intently at, Mr. Baily?"

Baily:—"I was admiring the roses on your bosom. They remind me of the beautiful ivy one so often sees climbing around an old ruin."

* * *

Gordon:—"What makes the time fly so fast in Ste. Annes?"

Miss Palmer:—"Because at every turn you make, you see a Da-go."

* * *

Matthews:—"What is a hopeless case?"

Smith:—"Twelve empties."

FINE UNDERSTANDING.

IF

14:—"That freshman certainly has the biggest feet in college."

'15:—"Yes his roommate says he has to put on his trousers over his head."

Ex.

* * *

"Do you obey the Bible injunction to love your neighbor?"

"I try to, but she won't let me."

Ex.

* * *

Senior:—"To what religious denomination do you belong, Lepetrie?"

Lepetrie:—"I belong to the Methodist Church,——when I'm at home."

* * *

Miss A. (to Mr. M., over whom hangs the penalty of leaving table 19 or going into the tank):—"I hear that you are going to be washed for our sakes."

* * *

Savoie (to Science girl sitting beside him):—"What is Miss F. waving her arms about her head for? Is she practising some new kind of gymnastics?"

Science Girl:—"Oh, that's nothing! She's only trying to describe her new hat."

* * *

Miss B:—"How can you look so cheerful, Miss T.?"

Miss T.:—"What is there to be sad about?"

Miss B:—"I was just thinking that, considering how near you are to your Coffin, you are bearing up remarkably well."

The Court says —

If only the boys at Macdonald would strictly obey the rules;

If all of our girls would imagine they were teachers of rural schools;

If orders, so kindly given, were readily carried out;

If students would listen to reason instead of refuse or pout;

If all of these things were accomplished and students were loyal and true,

The "Court of Honor," 'tis certain, Would not have so much to do.

The Others think:—

If only the Court of Honor, *themselves* would obey the rules;

If *they* would try to imagine they were teachers of rural schools;

If *they* would deal with us justly, and not in a barbarous way;

If *they* would listen to reason, and hear what we have to say.

Resolved:—

If these ill things were corrected

The students once more would prove true,

And the now toiling "Court of Honor" Would have nothing at all to do.

* * *

Dr Brittain (to Jacks, who has all but gone asleep while he has been explaining that a solitary molecule of a gas is absolutely incapable of making any motion of its own accord) —"How would you feel, Mr Jacks, were you to be struck by a single molecule?"

Jacks (drowsily)—"O, not very nervous."

AT THE TELEPHONE.

Feminine Voice—"May I speak to Mr. Huntley Gordon?"

Reply—"I may not be able to get him at once. Will you leave your number or your name and I'll have him ring you up as soon as I find him."

Feminine Voice—"Tell him to ring up *John*."

* *

"We are glad to see that 'Doc' Robertson is sending his son to Bishop's this year."—*The Mire*.

Doc's numerous friends will doubtless join with us in congratulating him on this event.

TALKERS, OFTEN.

The men who say
Hard work is sweet
Are those who live
On easy street.

Ex.

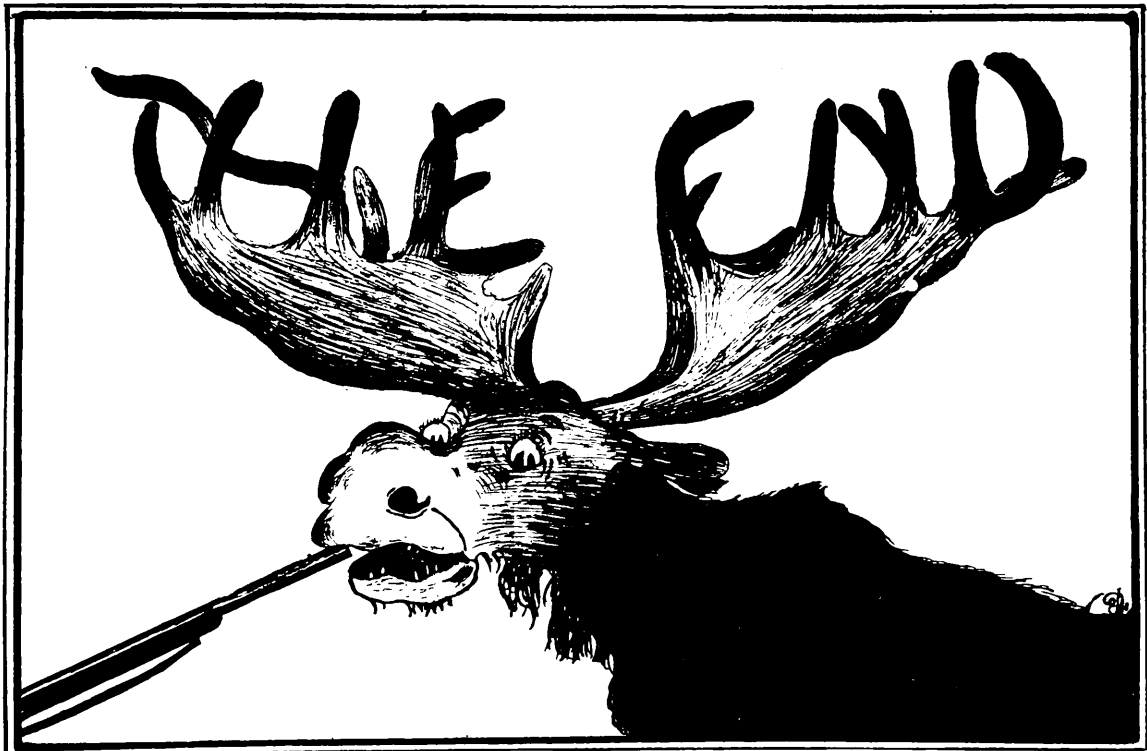
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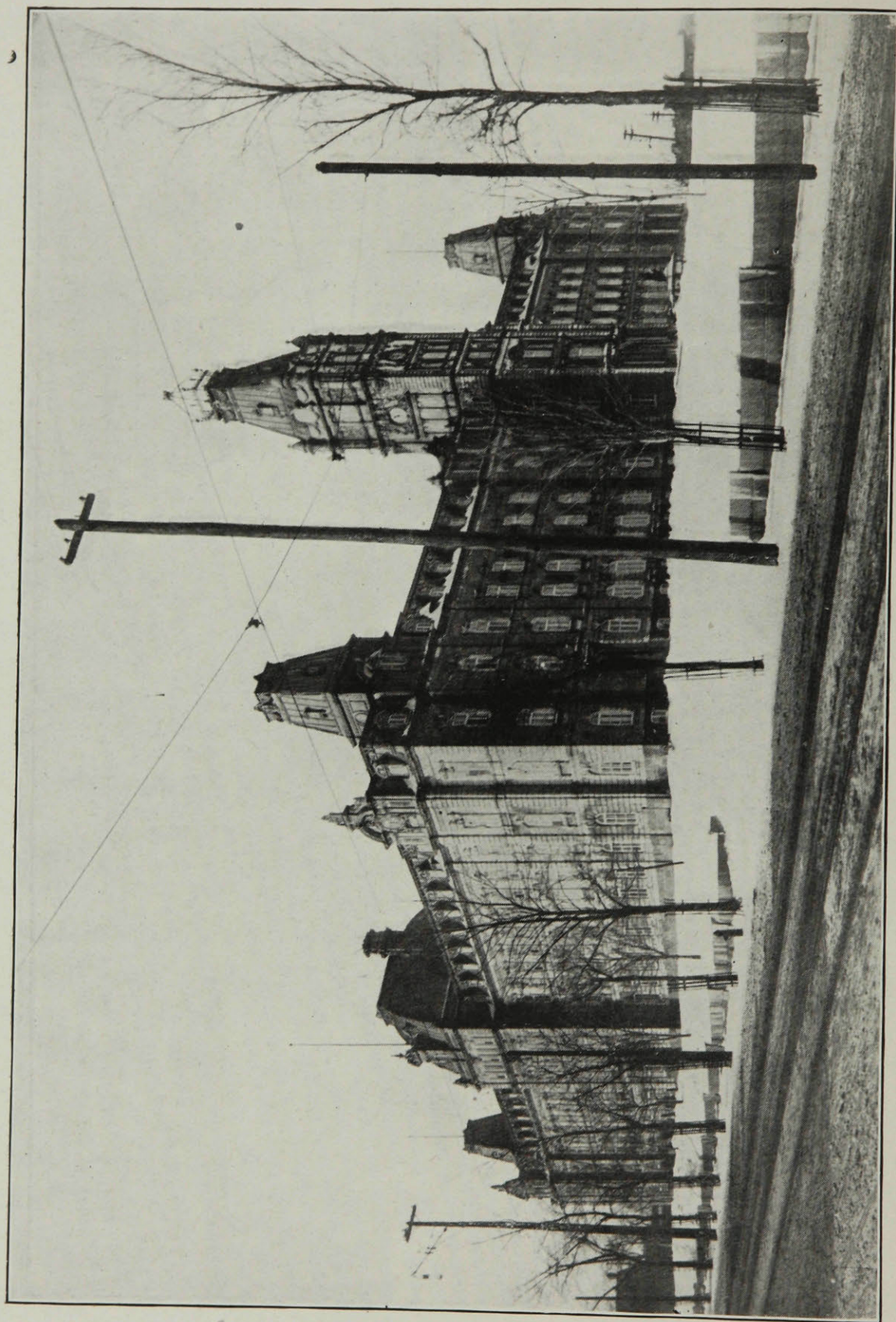
Miss D-w-r—"It seems as though someone has been trying to squeeze all the juice out of these peaches."

Mr W-l-m-s-n—"What are peaches meant for any way but to be squeezed?"

* * *

Miss W——tt (waiting for Mr. R—ym—d)—"My, how long he is!"





The Provincial Parliament Buildings.